

**SERVICE  
MANUAL PMS7000**

**marantz**

**model PMS7000**

*Radio/Stereo Cassette Recorder*

## MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ Company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

### ORDERING PARTS

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT  
20525 Nordhoff Street  
Chatsworth, California 91311  
Phone: 1-800-423-5108  
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

### OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

#### CANADA

Superscope Canada, Ltd.  
3710 Nashua Drive  
Mississauga  
Ontario, Canada L4V1M5

#### AUSTRALIA

Superscope (Australasia) Pty., Ltd.  
32 Cross Street (P.O. Box 604)  
Brookvale 2100 N.S.W.  
Australia

#### JAPAN

Marantz Japan, Inc.  
3622 Kamitsuruma  
Sagamihara Shi  
Kanagawa, Japan

#### EUROPE

Marantz Europe, S.A.  
Avenue Leopold III, 2  
7120 Peronne-Beaumont  
Belgium

Marantz France  
Rue Louis Armand 9  
92600 Asnieres  
Hauts-de-Seine  
France

Marantz Audio U.K. Ltd.  
London Road, 203  
Staines  
Middlesex  
England

Marantz GmbH  
Max-Planck-Strasse 22  
D-6072 Dreieich 1  
West Germany

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

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# MARANTZ MODEL PMS7000 RADIO/STEREO CASSETTE RECORDER



## 1. SERVICE NOTE

As can be seen from the circuit diagram, the chassis of Model PMS7000 consists of following units. Each unit mounted on a printed circuit board is described with in the square enclosed by bold dotted line on the circuit diagram.

Pre-Amp . . . . .	mounted on P.W. Board	P101
Power Amp . . . . .	mounted on P.W. Board	P200
Audio . . . . .	mounted on P.W. Board	P301
MIC Amp . . . . .	mounted on P.W. Board	P500
Phono Amp . . . . .	mounted on P.W. Board	P700
Headphone . . . . .	mounted on P.W. Board	P850
DC-DC unit . . . . .	mounted on P.W. Board	P901
DC-DC unit . . . . .	mounted on P.W. Board	P902
Power Supply . . . . .	mounted on P.W. Board	P950
Motor Filter . . . . .	mounted on P.W. Board	P990

## 2. TEST EQUIPMENT REQUIRED FOR SERVICING REPLACEMENT

### 2.1 AUDIO SECTION

For measuring checking the Model PMS7000, the following instruments and materials are necessary.

- Audio Oscillator (at OSC)
- Attenuator (600 ohm)
- VTVM
- Distortion Meter
- Oscilloscope
- Bandpass Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)

- Digital Frequency Counter
- Blank Tape (Completely erased with bulk eraser)
  - \* AC-211 (Normal)
  - \* AC-511 (CrO<sub>2</sub>)
  - \* CS-30 (Fe-Cr)

NOTE: If any doubt is noted in a measured value, used new tape.

- Test Tape (New tape)
  - MTT-111 . . . Wow and Flutter.
  - Tape Speed.
  - MTT-112 or . . . Measurement of output level.
  - 212                 Signal to Noise Ratio.
  - MTT-150 . . . Adjustment of output level.
  - MTT-216 or . . . Measurement of Frequency Response.
  - 116U              (For Normal)
  - MTT-316 or . . . Measurement of Frequency Response.
  - 116K              (For CrO<sub>2</sub>, Fe-Cr)
  - MTT-121 . . . Cross Talk.
  - MTT-141 . . . Channel Separation.

### 2-2. RADIO SECTION

FM: FM RF Signal Generator (Output Impedance 50 ohm)  
Matching Box (Input 50 ohm, Output 75 ohm)  
8 ohm Load Resistor  
Audio VTVM & Distortion Meter

AM: AM RF Signal Generator (Output Impedance 50 ohm)  
Test Loop Antenna  
8 ohm Load Resistor  
Audio VTVM & Distortion Meter

### 3. CIRCUIT DESCRIPTION

### 3.1 POWER SUPPLY CIRCUIT

8V line . . . Equalizers, tuner, and bias oscillator

12V line . . . Power amplifier, motor, lamp, etc.

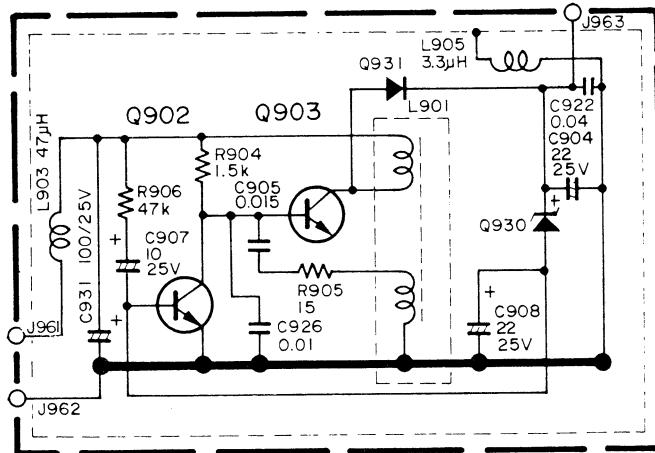
18V line . . . Dolby NR system IC, recording equalizer, and Mic amplifier

A zener diode stabilizes the 8V and 18V lines.

### 3.1.1 DC-DC CONVERTER

The D.C. voltage rectified by Q981 shown below is stabilized by Q930. An oscillation frequency of approx. 50 kHz at 12V has been selected to avoid AM beat. This block is completely shielded by copper and also installed in such a way that it does not touch the chassis.

**NOTE:** If the DC-DC converter touches the body chassis, RF signals enter the AM band. The DC-DC converter must not touch the chassis. And, if the 18V line is accidentally grounded during servicing, peak (transient) current will flow, and damage Q931.



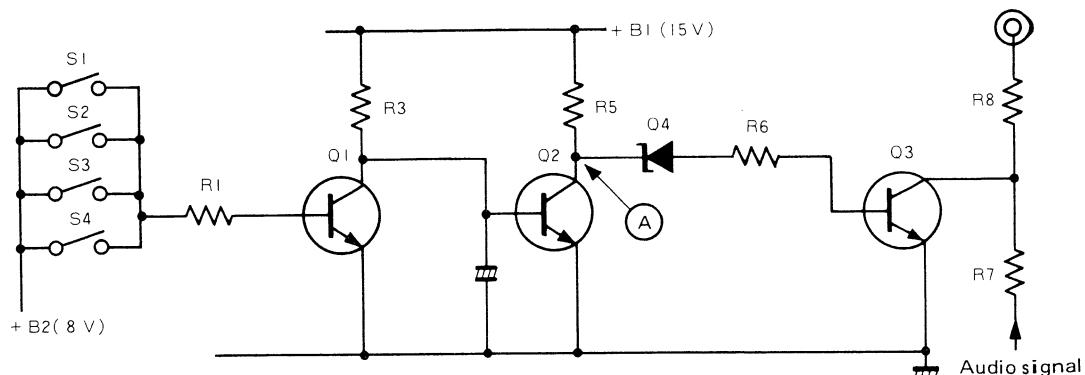
### 3.2 MUTING CIRCUIT

The muting circuit is switched ON automatically by muting circuit switches incorporated in the function, recording and playback switches.

Pop noise is muted by approx. 40 dB for a muting time of approx. 1 sec and is switched ON automatically during selection of function, recording and playback.

When S1, S2, S3 or S4 switch shown below is ON, Q1 is ON. Q2 is changed from ON to OFF because of the high resistance of R3 (150 k $\Omega$ ). Therefore, no current runs to Q2 and the potential in A section increases, exceeding that of Q4 zener area, which turns muting ON when base voltage is applied to Q3, thereby reducing pop noise during switching.

**NOTE:** When the remote wires of the REC/PLAY switches are disengaged, the switches stop on the way and enter the muting mode.



S1 ..... REC/PLAY muting switch  
S2 ..... REC/PLAY muting switch  
S3 ..... Function muting switch  
S4 ..... Play muting switch

### 3.3 MIXING CIRCUIT

Mixing is possible in all modes, but be sure to turn the mixing switch OFF when not mixing. The reason for this is that the left channel microphone input is supplied to both right and left channels and stereo separation will deteriorate if the mixing switch is ON.

### 3.4 HEADPHONE CIRCUIT

The main amplifiers are built into the speaker boxes, and therefore headphone output cannot be taken from the power amplifier. Volume output is divided and fed to 2 amplification systems, pre-out (main amplifier input) and headphone. The headphone input amplifier is a push-pull circuit.

### 3.5 RF CIRCUIT

#### 2.5.1 FM RF CIRCUIT

The RF Section is a separate system consisting of RF amplifier, local oscillator, and mixer. The IF stage is a 5-stage direct amplifier, employing two ceramic filters to improve selectivity.

The multiplex circuit employs a BA1320 (IC for PLL MPX) to ensure an adequate voltage drop range of up to 5.5V, and the stereo indicator employs an LN217, a red angular LED.

The output of the multiplexer passes through a low-pass filter, which suppresses the frequencies between 50 Hz and 15 kHz by  $\pm 1.0$  dB.

1) muting, 2) full-time AFC, and 3) mono/stereo selection are attached circuits.

The muting circuit is designed so that the muting level can be adjusted by a preset resistor to cope with variations in transistor performance.

#### 3.5.2 AM RF CIRCUIT

The intermediate frequency is 450 kHz. Coil and ceramic filters are used as selection elements.

#### 3.5.3 METER CIRCUIT

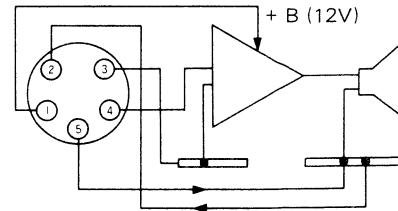
The meter circuit reads the IF output of both the AM and FM signals and also detects the battery voltage.

### 3.6 SPEAKER CONNECTION CORD

In this unit, power amplifiers are installed in the speaker boxes. This makes the ground loop more complex than those commonly used.

#### 3.6.1 POWER AMPLIFIER CONNECTION

5) is (-) ground supplied to power amplifier. 2) is return ground to the chassis from the power amplifier. 3) is the ground line from the chassis to main amplifier input. 4) is input, and 1) is +B (12V).

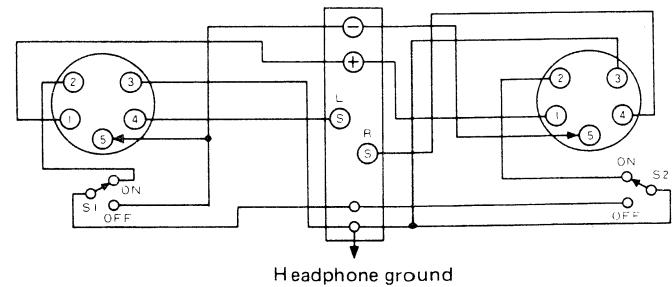


#### 3.6.2 CHASSIS CONNECTION

Plugging in the connecting cords of the power amplifiers turns S1 and S2 ON. Sound can be heard even when one cord is connected.

The return earth wiring method is complex but reduces the hum from the AC power supply. Refer to the circuit diagram when you have to rewiring.

**NOTE: Ground does not return if the chassis and connector on the rear cover are removed, and power supply will not be applied to P.W. boards. When rewiring, short 3P ground to power supply ground.**



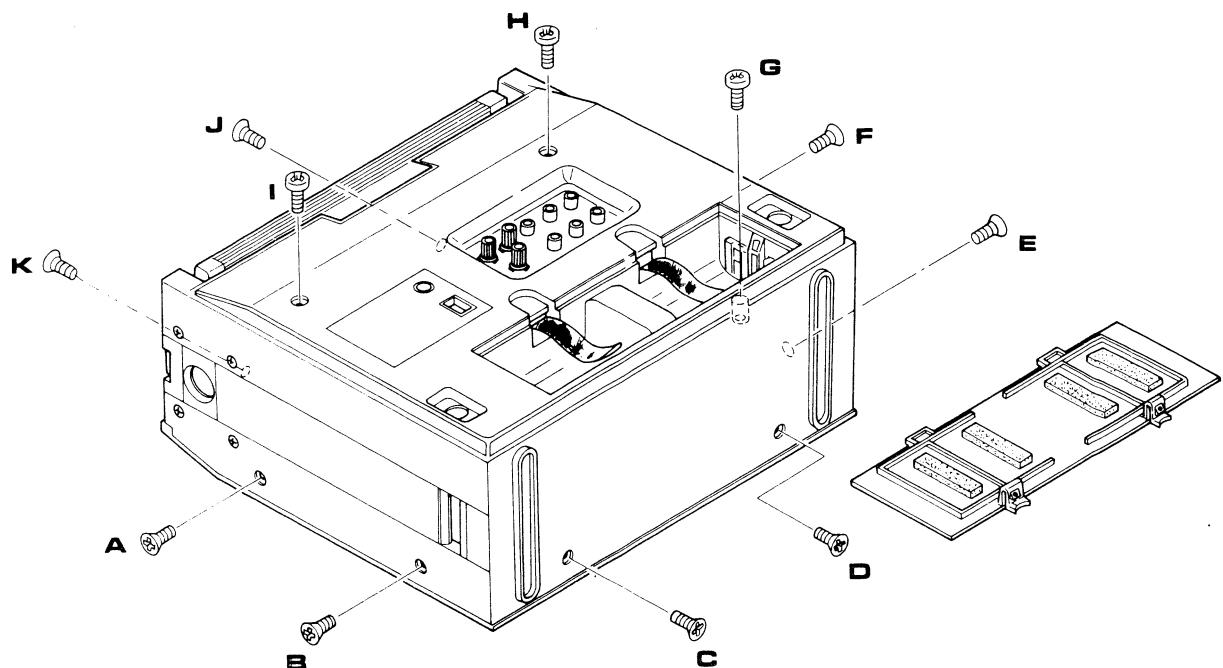
### 3.7 VOLTAGE CONVERSION

This unit may be converted to 110V operation by the Voltage Selector Switch (S009) located within the Battery Compartment.

## 4. UNIT DISASSEMBLY

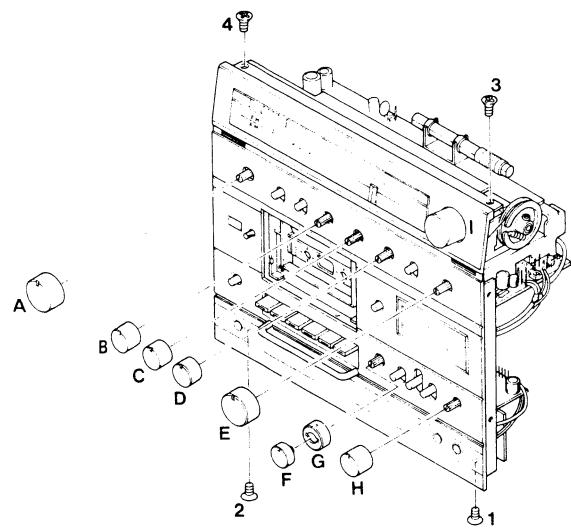
### 4.1 REAR COVER REMOVAL

After removing the battery lid, remove 11 screws (A to K) and remove the rear cover.



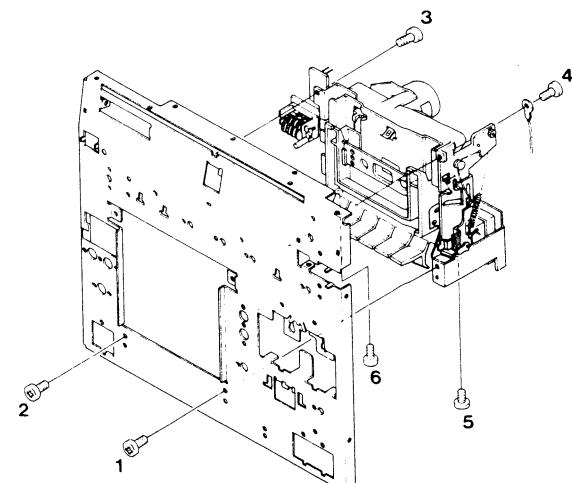
### 4.2 FRONT COVER REMOVAL

Remove knobs (A to I) and screws (1 to 4).



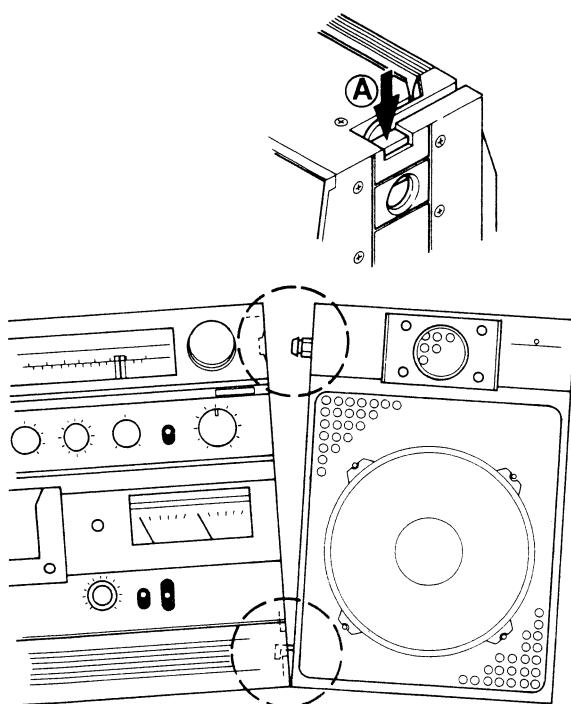
### 4.3 MECHANICAL PARTS REMOVAL

Remove screws (1 to 6).



#### 4.4 SPEAKER BOX REMOVAL

Depress reset button A and lift the body slightly to disengage the upper boss. Lift the speaker box to disengage the lower clamp.



## 5. SERVICE GUIDE

### 5.1 BATTERY VOLTAGE

What often happens when repairing a unit of this type is that you remedy the trouble without realizing that the battery is flat. When checking operation, always confirm that voltage is over 9V.

### 5.2 BATTERY POLARITY

If the polarity is wrong when the batteries are replaced, transistors and motor will be damaged. Avoid making this mistake.

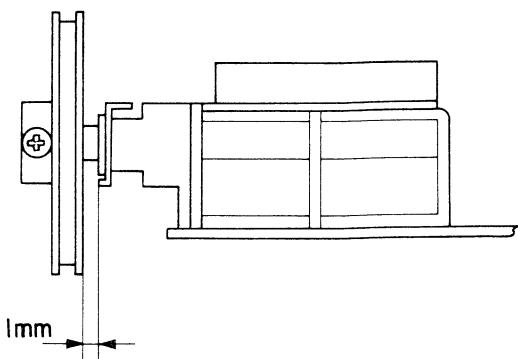
### 5.3 DIRTY HEAD

If magnetic materials from the tape or dust adhere to the heads, sound quality will deteriorate. To clean, wipe the heads with a soft cloth soaked in alcohol or carbon tetrachloride.

### 5.4 SERVICING NOTES

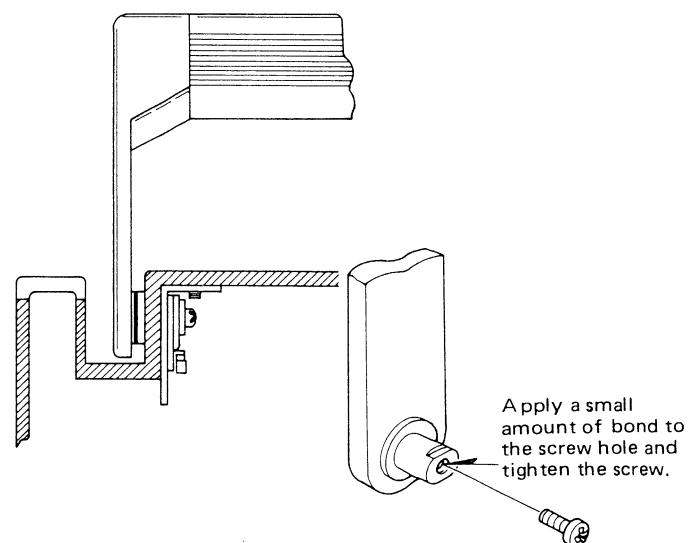
#### 5.4.1 INSTALLING STRING DRUM

Distance between variable capacitor stopper and drum is 1 mm.



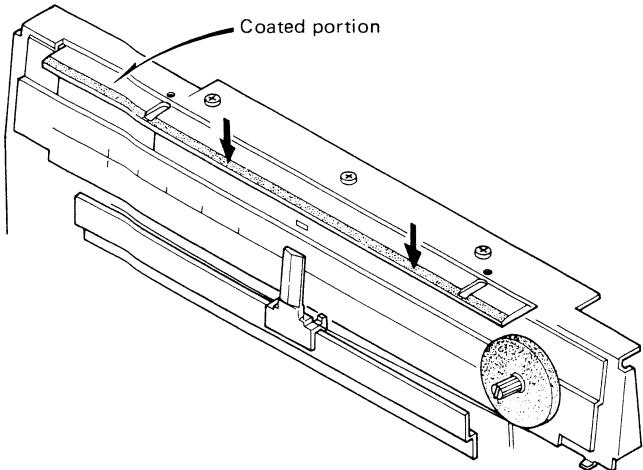
#### 5.4.2 MOUNTING THE HANDLE SUPPORT AND REAR COVER

Apply a small amount of bond to the support screw hole as a loosening prevention measure and tighten the screw.



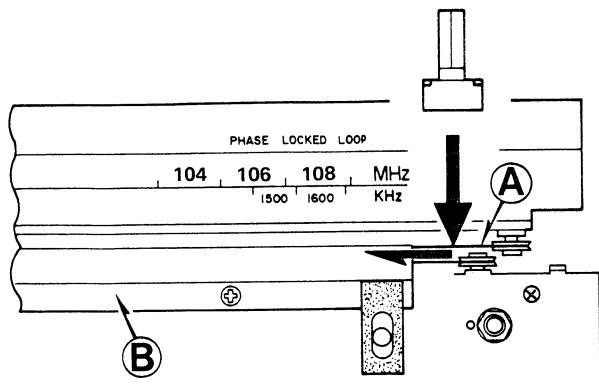
#### 5.4.3 DIAL ILLUMINATING REFLECTOR

When the coated edge is inserted into the front chassis as shown below, take care to avoid scratching it. If it is scratched, light will be lost, reducing the amount of light reflected from the under side.



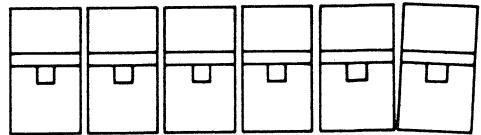
#### 5.4.4 INSTALLING POINTER

After running the string between the right end of the guide and pulley, slide it to left to make the rest of the job easier.



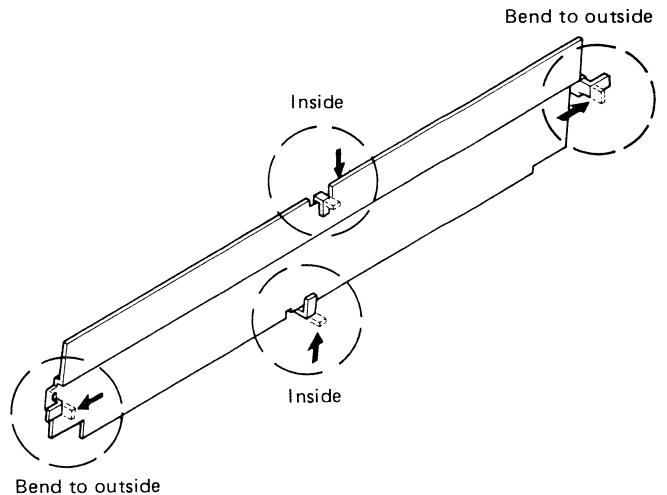
#### 5.4.5 INSTALLING PUSHBUTTONS

Make sure that the pushbuttons are installed vertical to the panel surface.



#### 5.4.6 INSTALLING DIAL PLATE

Install the dial plate with right and left claws outside and upper and lower claws inside, respectively.



#### 5.5 TROUBLESHOOTING

The items listed below indicate the trouble most commonly encountered with the PMS-7000.

- Power supply is not turned ON.
  1. Batteries are flat.
  2. Blown fuse (F901).
  3. Incorrect connection of power connector (J954).
  4. Broken power cord.
- Abnormally low sound level
 

When VU meters deflect:

  1. Defective power amplifier, or disconnected power amplifier connecting cord or poor contact.
  2. Defective intermediate terminal.

When VU meters do not deflect:

  1. The muting circuit is ON.
  2. REC/PLAY switches (S310) have not returned fully.
- Distorted sound
 

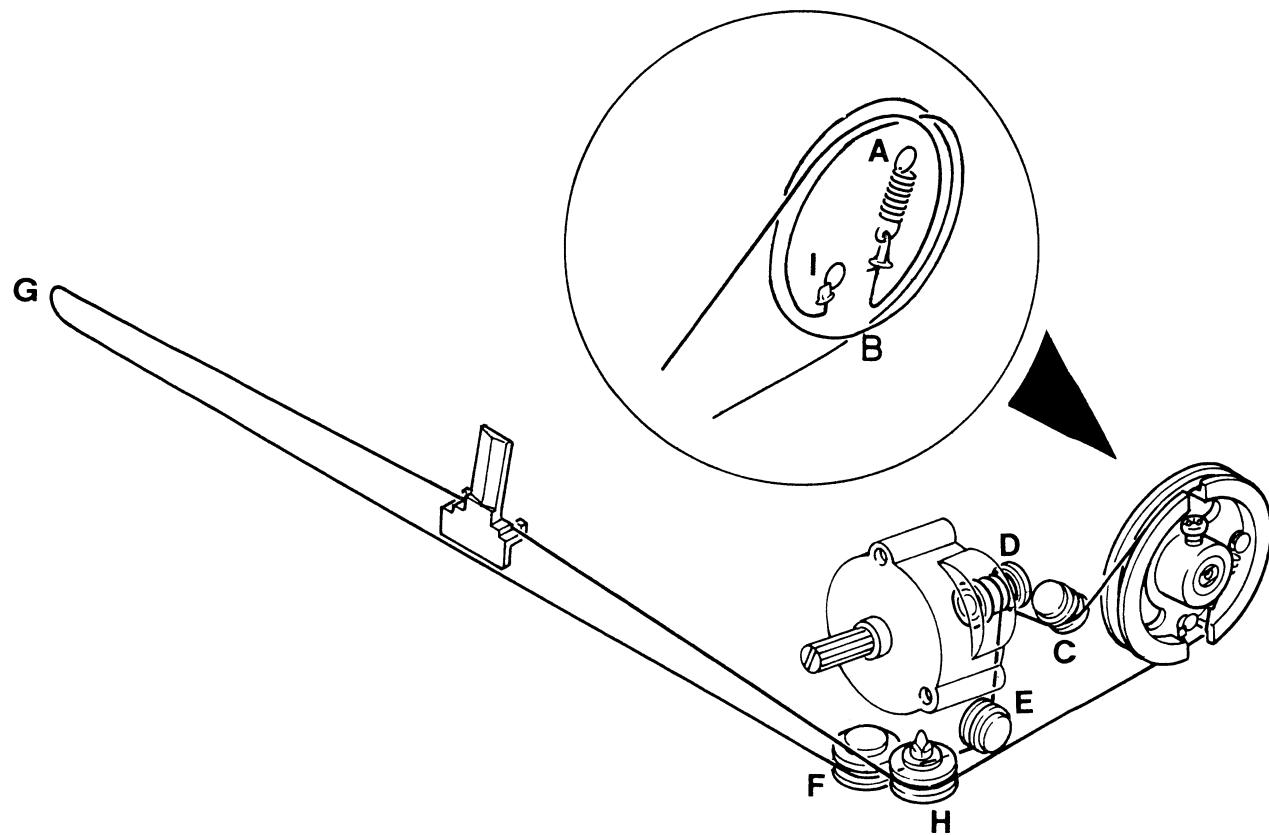
Does DC-DC converter voltage increase to 18V?

  1. If it does not increase, Q931, Q930, Q903, or Q902 is defective.
  2. If does increase, check each block.

**NOTE:** When the DC-DC converter is defective, a pop noise will be heard when the function switch or REC/PLAY switches are turned ON.

## 5.6 INSTALLING DIAL STRING

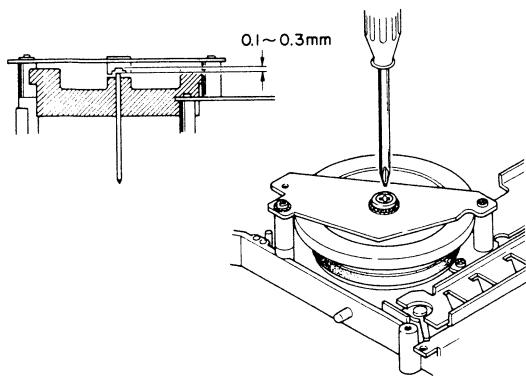
Route the string referring to the illustration.



## 6. MECHANICAL ADJUSTMENTS

### 6.1 ADJUSTING THE FLYWHEEL THRUST

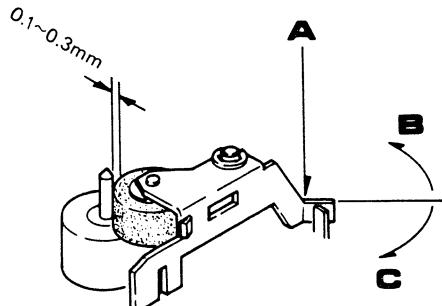
Using a Philips screwdriver, adjust the thrust screw on the flywheel bracket until the clearance between the capstan tail end and thrust bearing is 0.1 to 0.3 mm as shown. Adjustment must be effected by feel, as axial movement of the flywheel cannot be observed from above. Then paint-lock the screw.



### 6.2 ADJUSTING THE PAUSE TIMING

Set the unit in the play mode. Slowly press the pause button to stop the take-up reel. If necessary, adjust the bend angle of the pinch roller bracket arm (point A in the line drawing) until the clearance between the pinch roller and capstan is 0.1 to 0.3 mm.

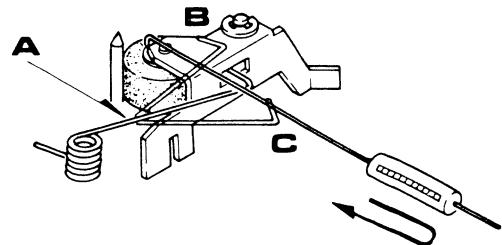
**NOTE:** To widen the clearance, make the bend angle smaller (in the direction of C). To make the clearance narrower, widen the bend angle (in the direction of B).



### 6.3 ADJUSTING THE PINCH ROLLER PRESSURE

Measure the pressure of the pinch roller using a gauge as shown. Draw the pinch roller in the direction of the arrow to detach it from the capstan shaft and gradually let it return toward the capstan. Read the gauge at the time when the pinch roller starts turning. The standard pressure is  $300 \pm 50$ g. If the pressure is out of the range, bend the pinch roller spring around point A in the direction of B or C.

**NOTE:** To increase the pressure, bend in the direction of B. To decrease the pressure, bend in the direction of C.



### 6.4 ADJUSTING THE PLAY TIMING

It is normal that when the PLAY button is depressed, the take-up reel table turns first, then the pinch roller rotates. The reel table and pinch roller must not start turning at the same time.

**NOTE:** Make certain that this operation is carried out by depressing the play button slowly without loading a tape.

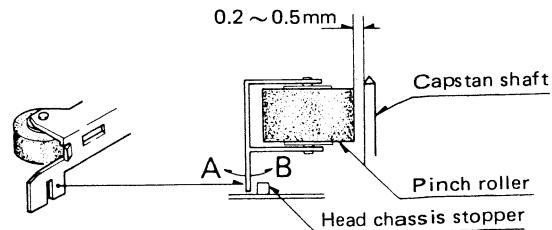
#### 1. CHECKING FOR ADJUSTMENT

Slowly depress the PLAY button to start the take-up reel turning. Check whether or not the clearance between the pinch roller and capstan is 0.2 to 0.5 mm.

#### 2. ADJUSTMENT

Bend the pinch roller bracket at the point that touches the head chassis stopper. In the line drawing, bending left reduces the clearance between the capstan and pinch roller.

**NOTE:** Make certain that the pinch roller bracket does not touch the head chassis stopper in the play mode.



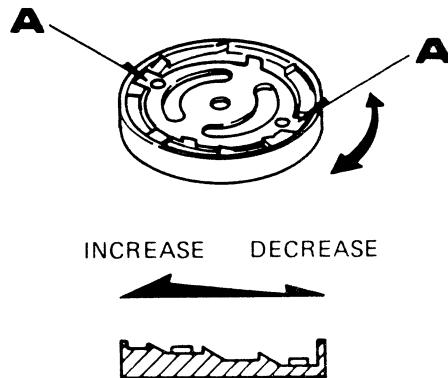
## 6.5 ADJUSTING THE PLAY TORQUE

Put the two pawls of the circular plate spring in a proper stepped position on the reel rest. The adjustable torque range is 40 to 70 g-cm.

To increase the torque, put the pawls on a shallow step. For lower torque, put them on a deeper step.

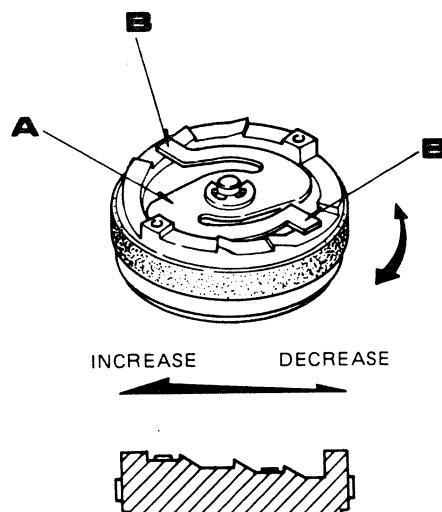
- Checking the take-up clutch for sliding

Make certain that the flywheel rotates freely when the reel table is locked. A flywheel should not revolve irregularly or stop.



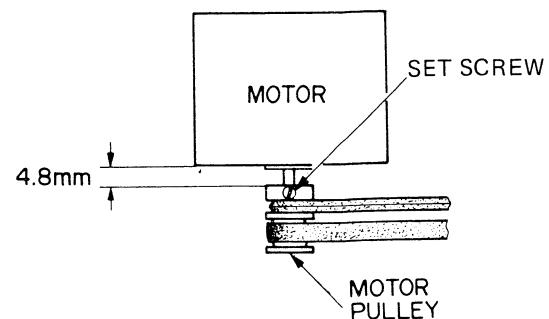
## 6.6 ADJUSTING THE FAST FORWARD AND REWIND TORQUE

The fast forward and rewind idler has a torque adjust plate spring (part A in the line drawing), which has two pawls (part B) at its ends. Set the pawls in the proper step. To increase the torque, set the pawls in the shallowest step. For lower torque, set in the deepest step.



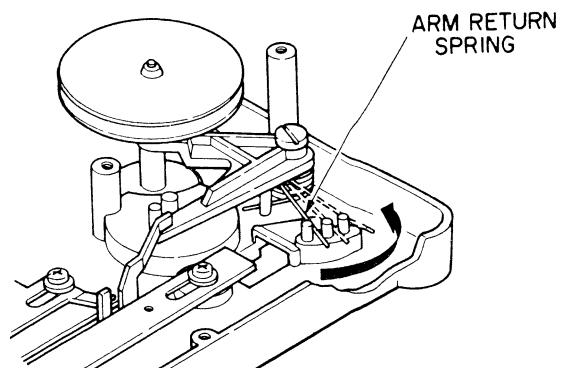
## 6.7 POSITIONING THE MOTOR PULLEY

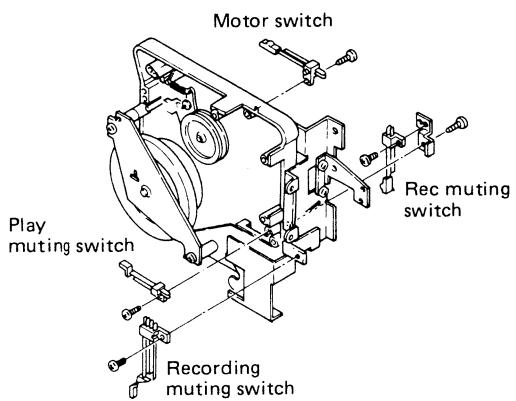
Loosen the set screw and adjust the motor pulley position until the clearance between the pulley and motor is 4.8 mm as shown. Tighten the set screw.



## 6.8 ADJUSTING THE REWIND IDLER SIDE PRESSURE

Make certain that in the rewind mode, the rewind idler does not slip on the supply reel table when held by hand. If it slips, gradually change the hanging position of the rewind idler arm return spring on the chassis, in the direction of the arrow, until it ceases to slip.

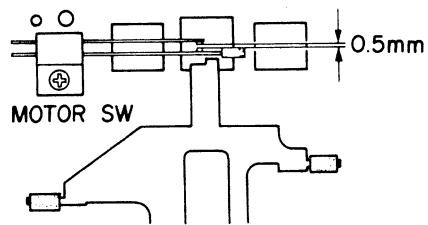




## 6.9 POSITIONING THE SWITCHES

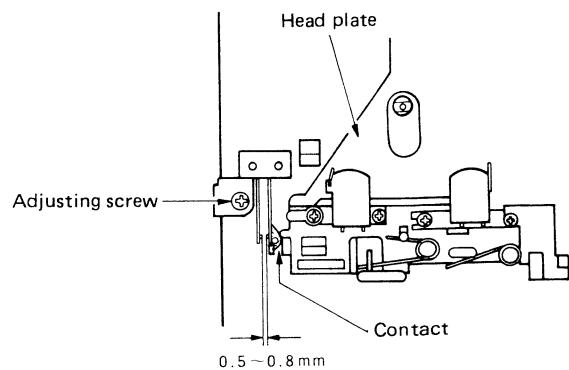
### 6.9.1 MOTOR SWITCH

Turn the motor switch in the direction of the arrow until it is screwed tight. Make certain that the contact gap is wider than 0.5 mm.



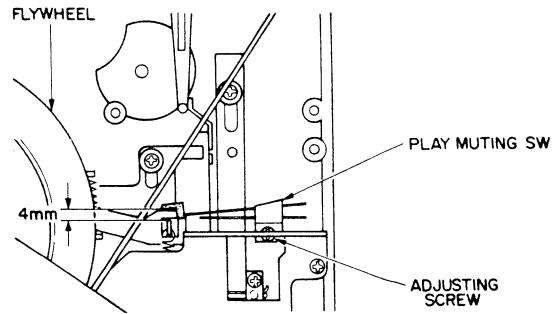
### 6.9.2 CUE/REVIEW MUTING SWITCH

Loosen the screw fixing the muting switch after pressing the STOP button. Turn the adjusting screw so that the gap between the contacts when the head touches the head plate is between 0.5 and 0.8 mm. Check that the contacts make when the cue/review switch is pressed.



### 6.9.3 PLAY MUTING SWITCH

In the stop mode, loosen the screw holding the play muting switch and position that the clearance between its end tip and the play lever 4 mm.



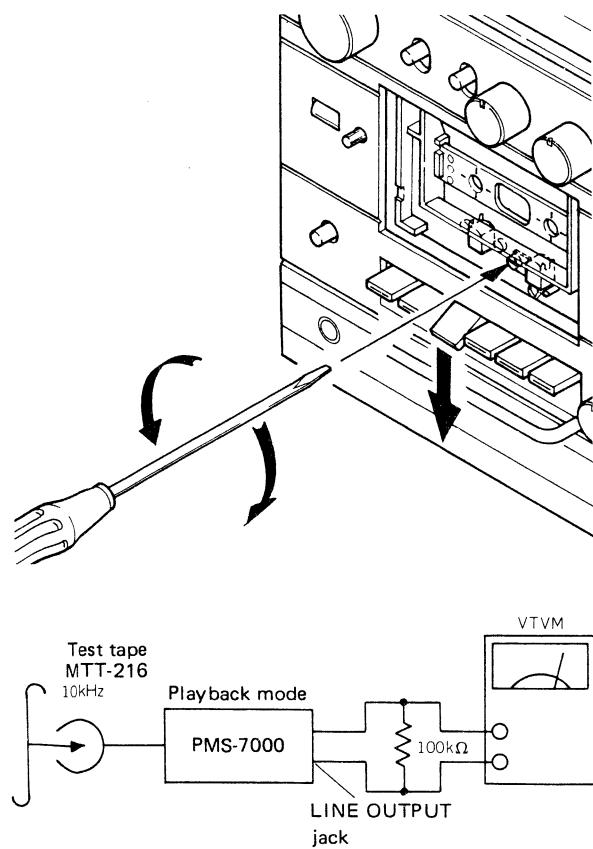
## 7. ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

### PRECAUTION FOR ADJUSTMENT AND MEASUREMENT

1. Whenever adjusting or measuring any circuit, wipe the heads clean with a soft cloth moistened with alcohol or carbon tetrachloride. Also be sure to demagnetize the heads, capstan, and similar parts.
2. The voltage at any electrical point may vary with the input signal, so measure the voltage under a non-signal condition.
3. Transistors are affected by microvoltage. Whenever measuring them, use a VTVM which has a high enough internal resistance and input sensitivity to eliminate errors in measurement.
4. In adjustment or measurement, set the TONE control to its mechanical center ("0") unless otherwise specified.
5. For measurements of output, connect a pure  $4\Omega$  resistor across the external speaker terminal and use a VTVM. Unless otherwise specified, adjust the VOLUME control for the standard output level, 50 mW (0.45V/ $4\Omega$ ).

### 7.1 AZIMUTH ADJUSTMENT

1. Set TAPE SELECTOR switch to NORMAL.
2. Reproduce the 10 kHz signal on test tape MTT-216 and turn the screw for azimuth adjustment so that output voltage becomes maximum.
3. When the maximum points of L and R channels are different, adjust it to the points where the output levels of the L and R channels are equal.
4. Be sure to apply paint to lock the screws after adjustment.

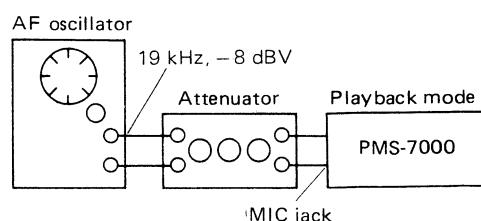


### 7.2 VU METER ADJUSTMENT

1. Set the unit to play mode.
2. Apply a 400 Hz, -8 dBV signal to AUX jack.
3. Connect the VTVM to 7P of Q307.  
Adjust the input level so that the VTVM reading is 580 mV.
4. Keeping the condition in item 3, adjust R367 so that the reading of Lch VU meter is 0.
5. Connect the VTVM to 7P of Q308.  
Adjust the input level so that the VTVM reading is 580 mV.
6. Keeping the condition in item 5, adjust R368 so that the reading of Rch VU meter is 0.

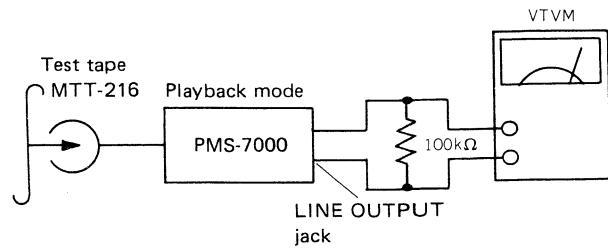
### 7.3 MPX FILTER ADJUSTMENT

1. Set the unit to play mode.
2. Apply a 19 kHz, -8 dBV signal to AUX jack.
3. Adjust L303 (L) and L304 (R) for minimum output level at the LINE OUTPUT jack.



### 7.4 PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

1. Set the TAPE SELECTOR switch to NORMAL.
2. Reproduce the 315 Hz and 10 Hz on test tape MTT-216 and adjust R405 and R406 so that the level difference is 0 dB.



### 7.5 PLAYBACK LEVEL ADJUSTMENT

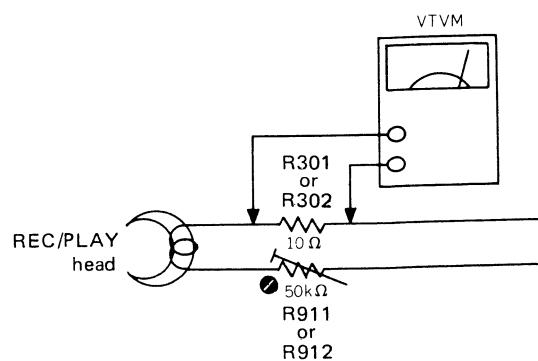
1. Set the TAPE SELECTOR switch to NORMAL.
2. Play the MTT-150 test tape. Adjust R369 and R370 so that the VU meters (G002) read "0".

### 7.6 ARL BALANCE ADJUSTMENT

1. Set the unit to recording mode.
2. Set REC MODE switch to AUTO.
3. Apply a 1 kHz, -60 dB signal to the MIC jack.
4. Adjust R375 so that the readings on VU meters (G002) are similar for both Lch and Rch.
5. Apply a 1 kHz, -40 dBV signal to the MIC jack. Confirm that the difference between the Lch and Rch readings on the VU meters is within 4 graduation. If the difference is not as specified, readjust R375.

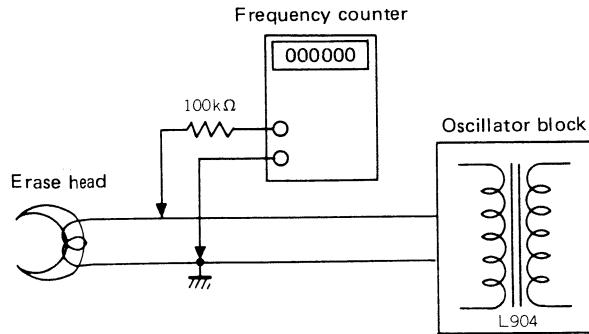
### 7.8 BIAS CURRENT ADJUSTMENT

1. Set the unit to recording mode.
2. Set the REC MODE switch to AUTO.
3. Set the TAPE SELECTOR switch to NORMAL.
4. Adjust R911 and R912 so that the voltage of both R301 and R302 ( $10\Omega$ ) entering the REC/PLAY head in series reads 3.5 mV.
5. When the TAPE SELECTOR switch is set to  $\text{CrO}_2$ , the voltage should be approx. 5 mV.



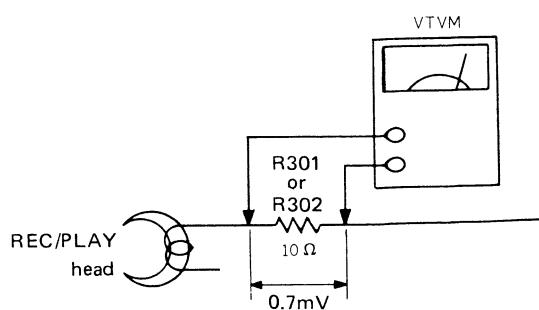
### 7.7 BIAS OSCILLATOR FREQUENCY ADJUSTMENT

1. Set the unit to recording mode.
2. Adjust L904 so that when ISS switch is OFF, the bias oscillator frequency becomes 100 kHz.



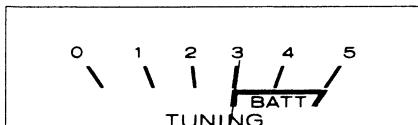
### 7.9 RECORDING CURRENT ADJUSTMENT

1. Set the unit to recording mode.
2. Set the REC MODE switch to MANUAL.
3. Set the TAPE SELECTOR switch to NORMAL.
4. Apply a 1 kHz, -60 dBV signal to MIC jack.
5. Remove lead to R914 to stop operation of the bias oscillation circuit.
6. Adjust R415 and R416 so that the voltage of R301 and R302 ( $10\Omega$ ) entering the REC/PLAY heads in series reads 0.7 mV.



#### 7.10 ADJUSTING BATTERY CHECK CIRCUIT

1. Connect calibrated 9.0V direct current power supply to the external DC power supply jack (DC12V) and set the unit to recording mode.
2. Adjust R953 so that the meter indicates the position shown below when the battery check switch is ON.



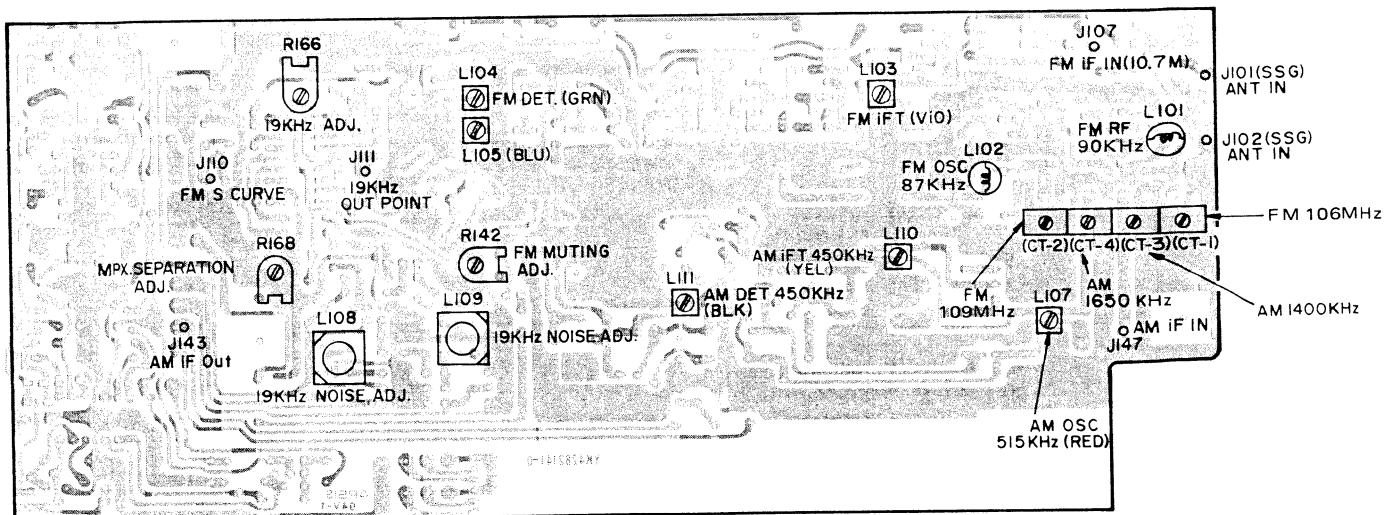
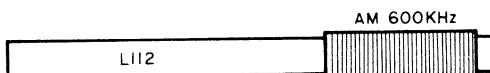
## 8. TUNER ADJUSTMENT

### 8.1 FM ADJUSTMENT PROCEDURE

(FUNCTION switch .... FM, MODE switch .... MONO)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Connect SG to J107.	10.7 MHz Sweep	—	Connect oscilloscope vertical jack to J110 or ground (J114) through diode.	L103 L104 L105	Rotate each core and adjust so that oscilloscope waveforms are highest and symmetrical on both sides.
2	Connect SG to J101 through the dummy antenna.	87 MHz (Modulated)	87 MHz (Maximum variable capacitor capacity)	Connect the output meter to the LINE OUTPUT jack or J141 (L) and J142 (R).	OSC coil L102	Adjust so that the output meter reads a maximum.
3		109 MHz (Modulated)	109 MHz (Maximum variable capacitor capacity)		Trimmer CT-2	
4	Repeat procedures 2 and 3.					
5	Connect SG to J101 through the dummy antenna.	90 MHz (Modulated)	90 MHz	Connect the output meter to the LINE OUTPUT jack or J141 (L) and J142 (R).	L101	Adjust so that the output meter reads a maximum.
6	Connect SG to J101 through the dummy antenna.	106 MHz (Modulated)	106 MHz		Trimmer CT-1	
7	Repeat procedures 5 and 6.					

NOTES: 1. Connect the negative (—) jack of the oscillator to the ground (— ground) of the unit.  
 2. Set oscillator output to 1 kHz, 40 kHz DEV.  
 3. Adjust oscillator output to obtain a minimum.  
 4. Set volume knob to maximum.



## 8.2 FM STEREO ADJUSTMENT PROCEDURE

(FUNCTION switch . . . FM, MODE switch . . . STEREO)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Connect SG to J101 through the dummy antenna.	—	98 MHz	Connect frequency counter between J111 and ground (J114).	Preset resistor R166	Adjust the frequency counter so that it comes to the mechanical center of 19 kHz.
2		L Channel		Connect output meter to LINE OUTPUT jack or J701-8 (R) and J701-9 (L).	Preset resistor R168	Adjust preset resistor so that output meter reading of R channel indicates minimum output.
3		R Channel		Connect output meter to LINE OUTPUT jack or J701-8 (R) and J701-9 (L).		Adjust preset resistor so that output meter reading of L channel indicates minimum output.
4	Repeat procedures 2 and 3.					

## 8.3 FM MUTING ADJUSTMENT PROCEDURE

(FUNCTION switch . . . FM, MODE switch . . . MONO)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Connect SG to J101 through the dummy antenna.	98 MHz Set input level to approx. 30 dB S/N sensitivity.	98 MHz	Connect output meter to LINE OUTPUT jack or J141 (L) and J142 (R).	Preset resistor R142	Adjust so that output waveforms do not change.

## 8.4 AM ADJUSTMENT PROCEDURE

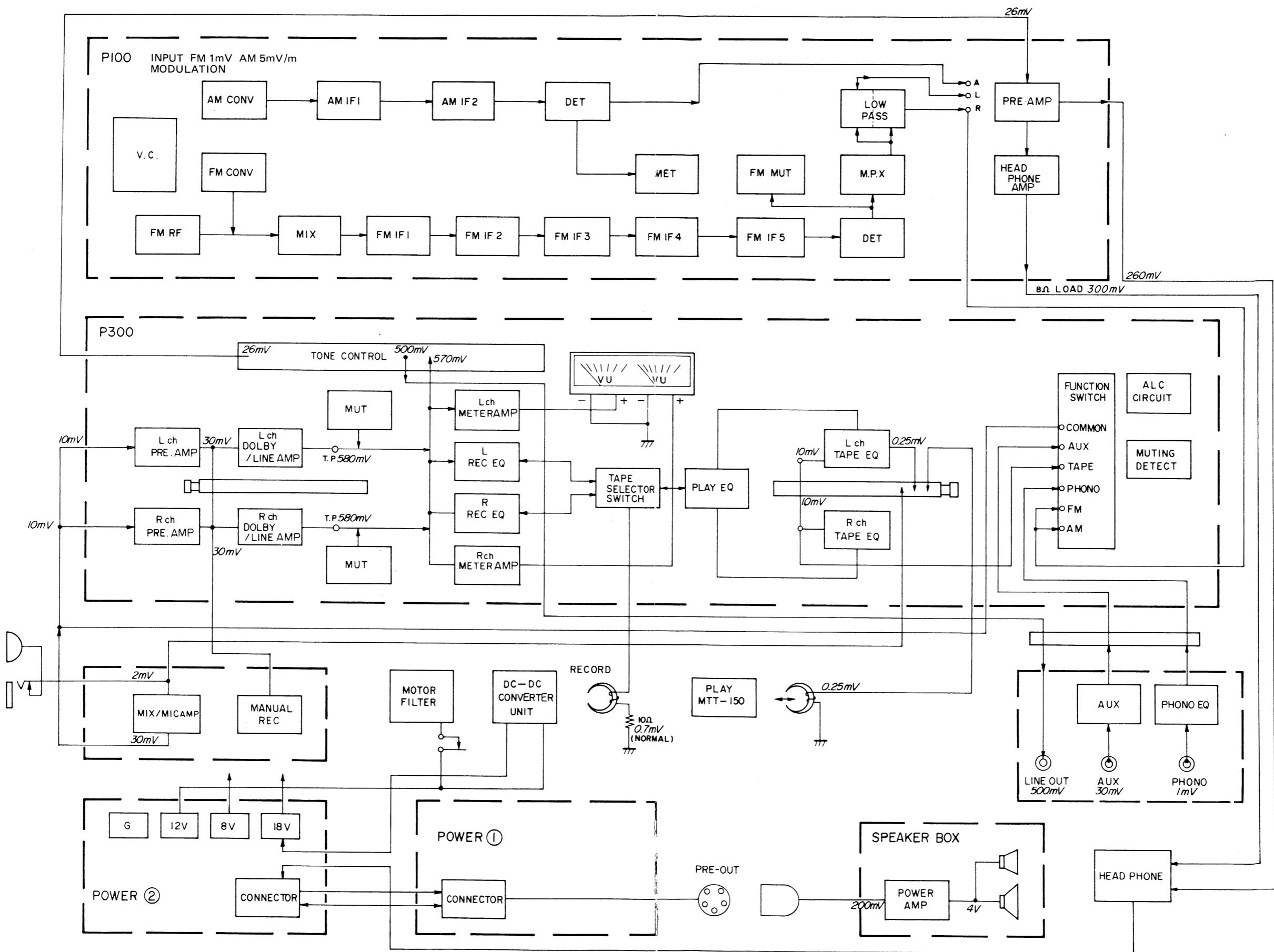
(FUNCTION switch . . . AM)

Procedure	Signal generator connection	Signal generator output	Tuning dial	Measurement instrument connection	Adjustment point	Remarks
1	Connect SG to J147.	450 kHz Sweep $\pm 35$ kHz	—	Connect oscilloscope to J115 (ground lead to J143).	L110 L111	Rotate each core and adjust so that oscilloscope waveforms are highest and symmetrical on both sides.
2	Radiate SG output to antenna coil through loop antenna.	515 kHz (Modulated)	515 kHz (Maximum variable capacitor capacity)	Connect output meter to LINE OUTPUT jack or J143.	OSC coil L107	Adjust so that the output meter indicates a maximum.
3		1,650 kHz (Modulated)	1,650 kHz (Minimum variable capacitor capacity)		Trimmer CT-4	
4	Repeat procedures 2 and 3.					
5	Radiate SG output to antenna coil through loop antenna.	600 kHz (Modulated)	600 kHz	Connect output meter to LINE OUTPUT jack or J143.	ANT coil L112	Adjust so that the output meter indicates a maximum.
6		1,400 kHz (Modulated)	1,400 kHz		Trimmer CT-3	
7	Repeat procedures 5 and 6.					

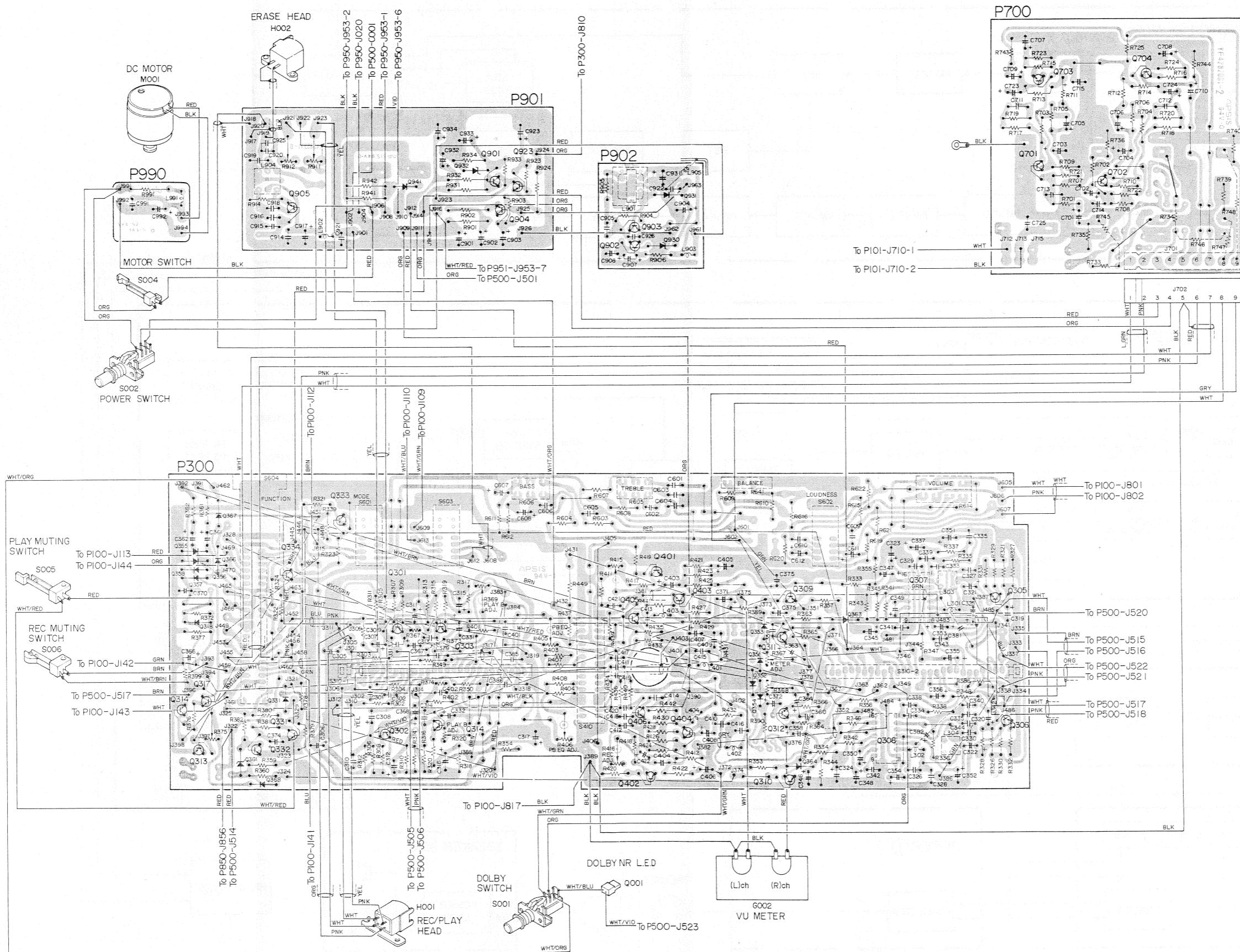
NOTES:

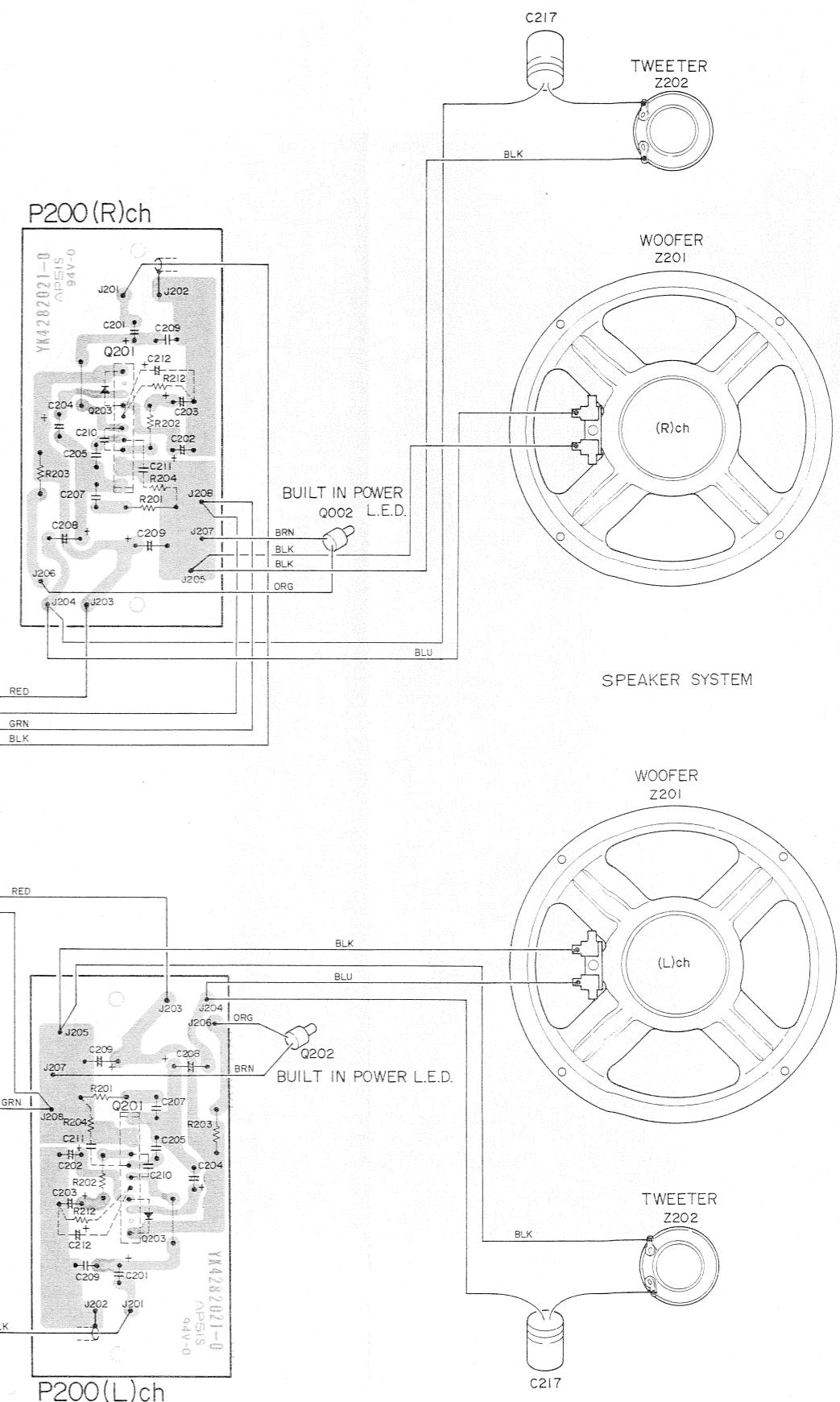
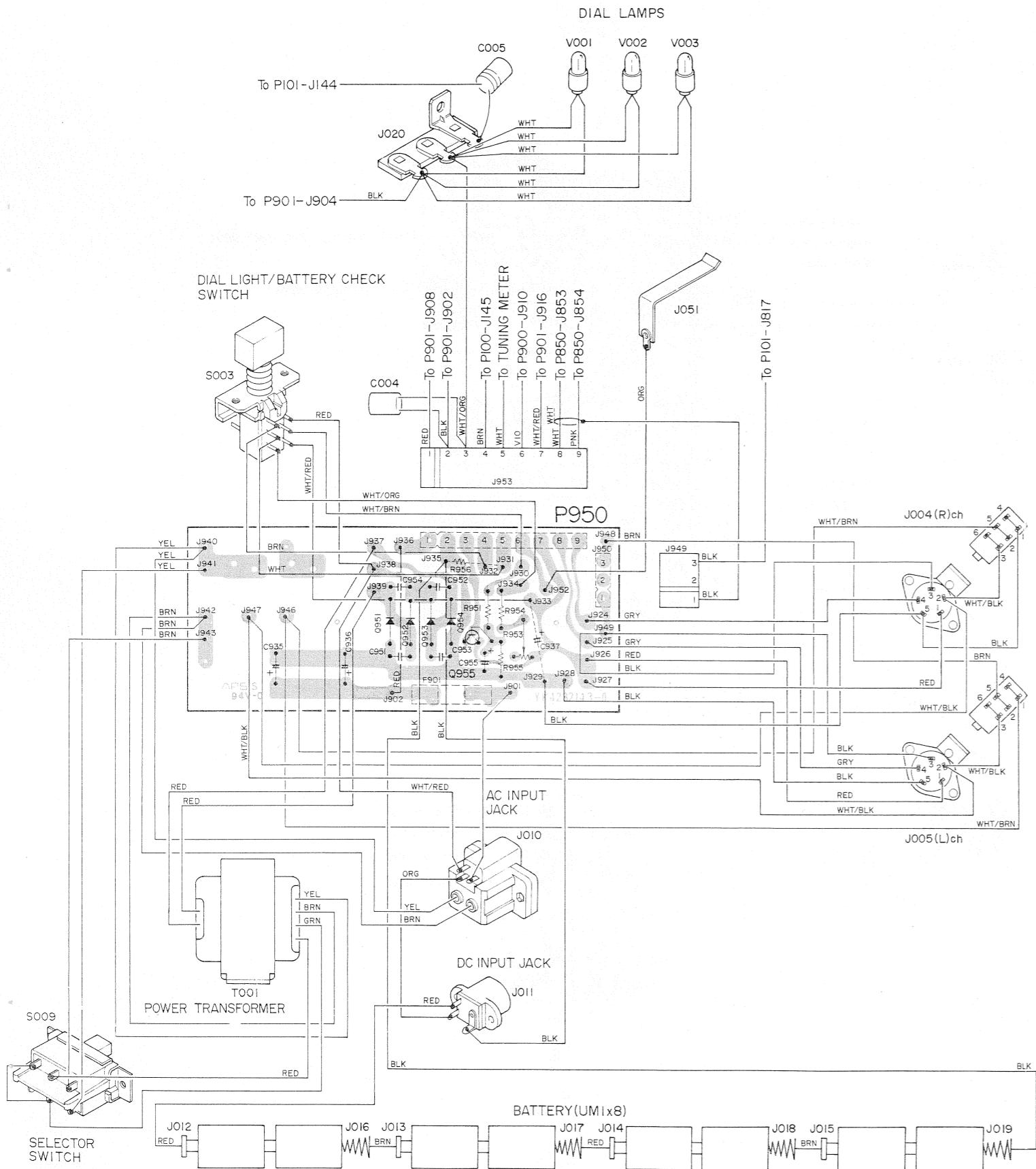
1. Connect the negative (—) jack of the oscillator to ground (— ground) of the unit during adjustment.
2. Oscillator output should be 400 Hz with 30% modulation.
3. Adjust oscillator output to obtain a minimum.
4. Set volume knob to maximum.

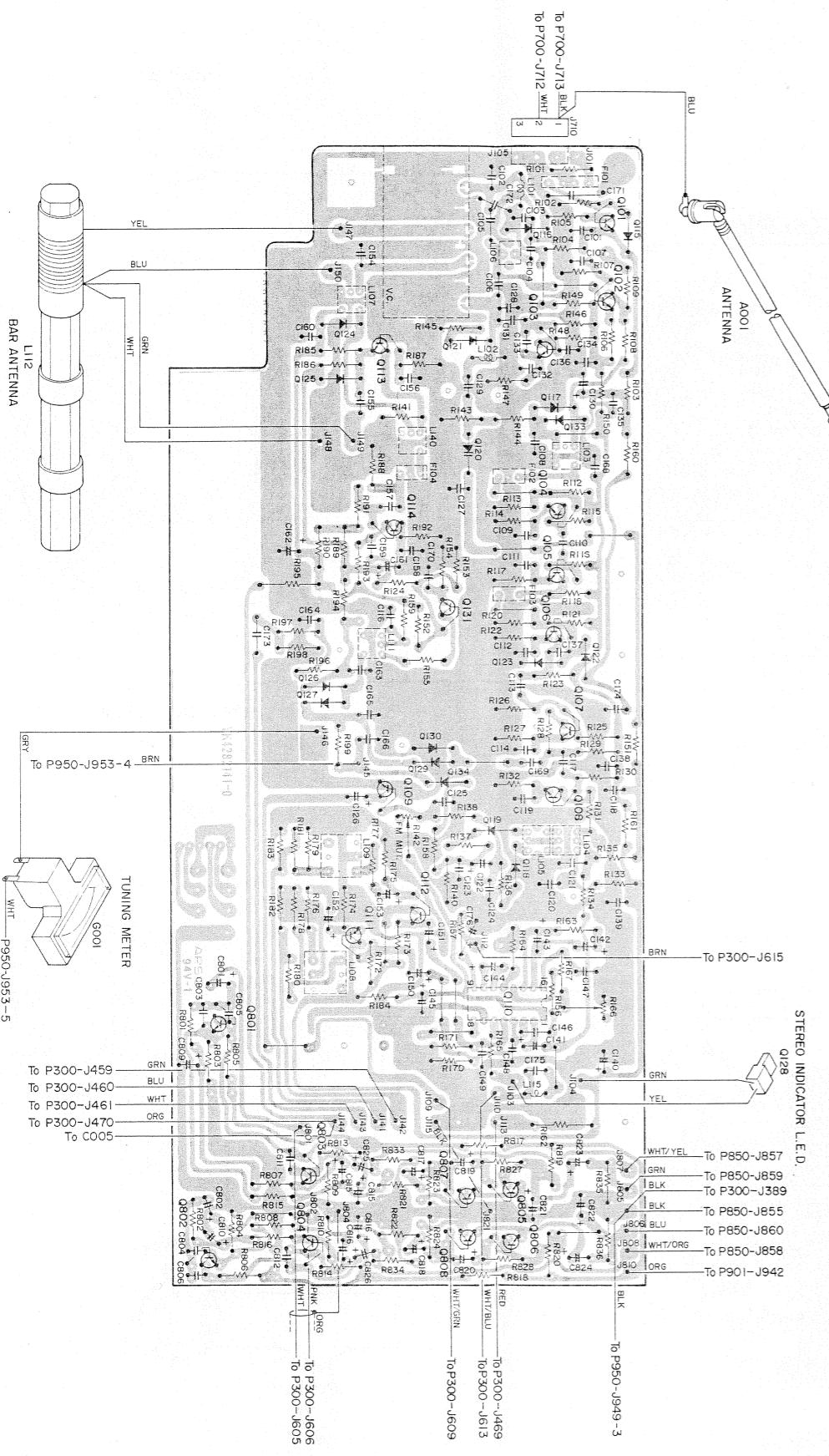
## 9. BLOCK DIAGRAM



## 10. CIRCUIT BOARD DIAGRAM

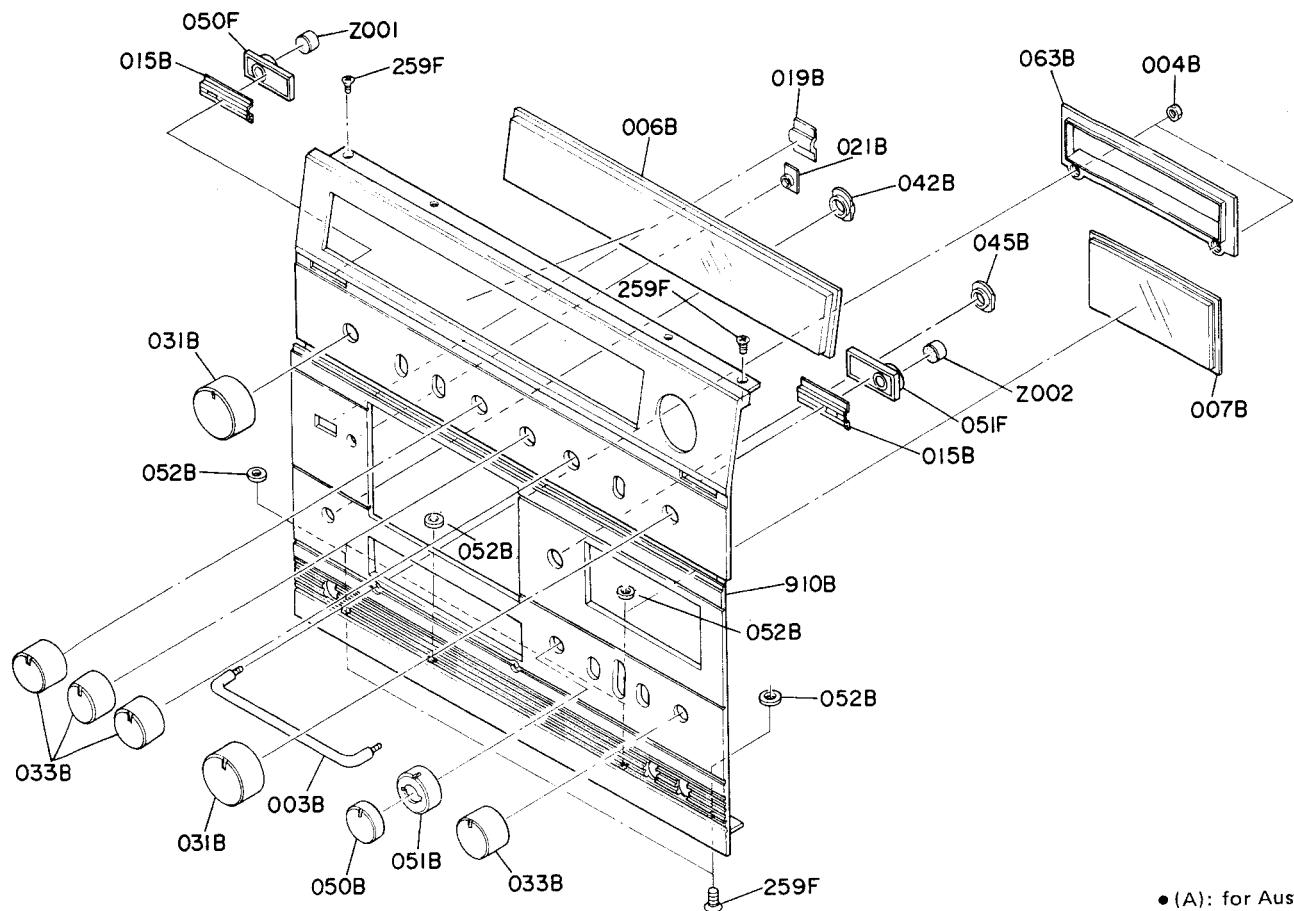






## 11. EXPLODED VIEWS AND PARTS LIST

### 11.1 [P01-99] FRONT ESCUTCHEON

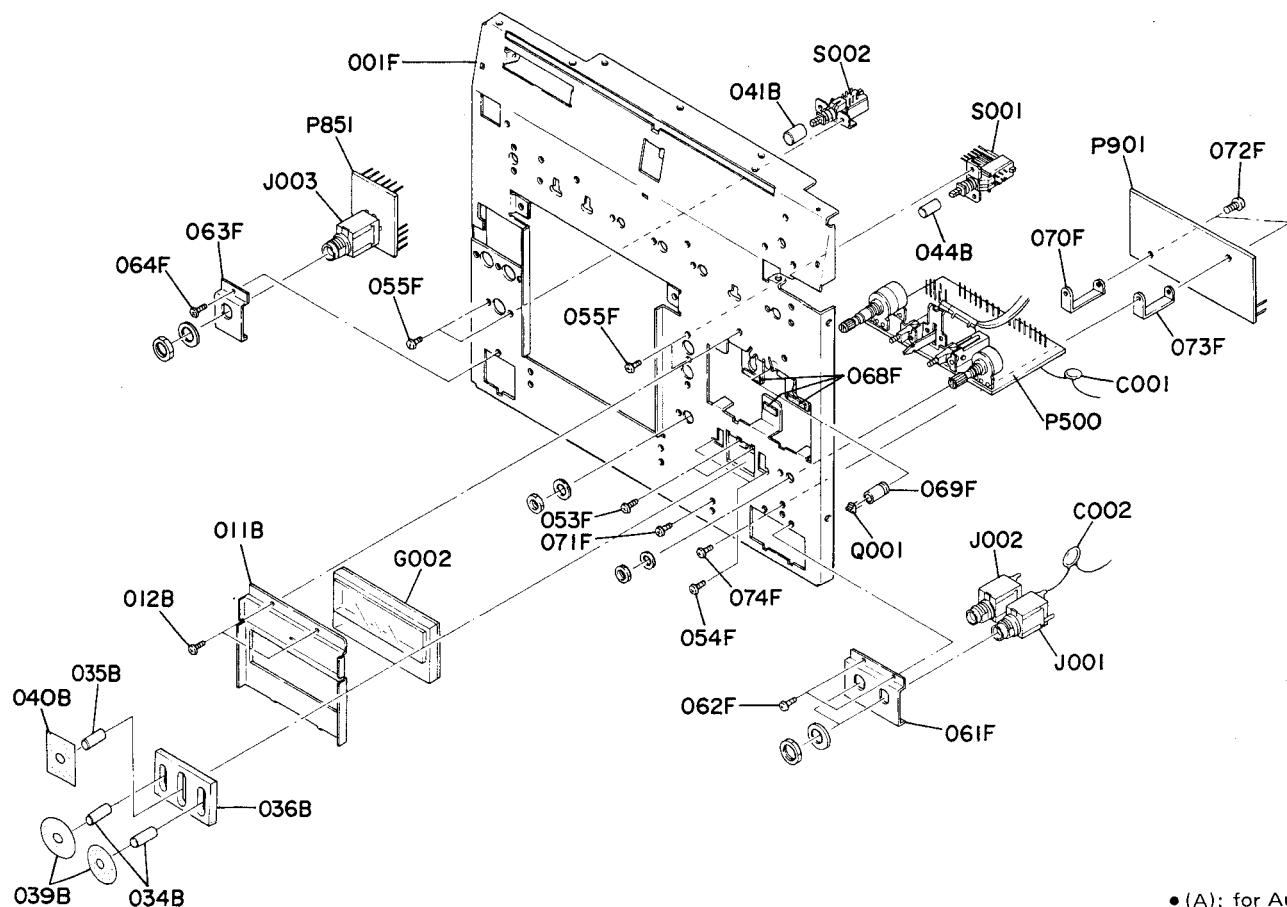


• (A): for Australia  
• (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
A 003B	1	1	4282063410	Front Panel Assembly
	1	1	4282051020	Guide
004B	2	2	53110303A9	Hexagon Nut
006B	1	1	4282158010	Window, Dial
007B	1	1	4282158020	Window, Meter
015B	2	2	4282063050	Escutcheon, E.C.M.
019B	1	1	4123158030	Window, Counter
021B	1	1	3448259110	Bushing, Counter
042B	1	1	2978259010	Bushing, Power
045B	1	1	3448259120	Bushing, Dolby
063B	1	1	4282259010	Bushing
910B	1	1	4282063510	Escutcheon, Front Panel

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
031B	2	2	4197154050	Knob, Vol/Function
033B	4	4	4282154020	Knob
050B	1	1	4198154030	Knob, Rec Level
051B	1	1	4198154040	Knob, Rec Level
052B	4	4	59030805P0	Washer
050F	1	1	4282271030	Holder, E.C.M.
051F	1	1	4282271030	Holder, E.C.M.
259F	4	4	51040306B9	F.H.M. Screw
Z001	1	1	MS50090070	Mic. Unit
Z002	1	1	MS50090070	Mic. Unit

## 11.2 [P01-99] FRONT ESCUTCHEON

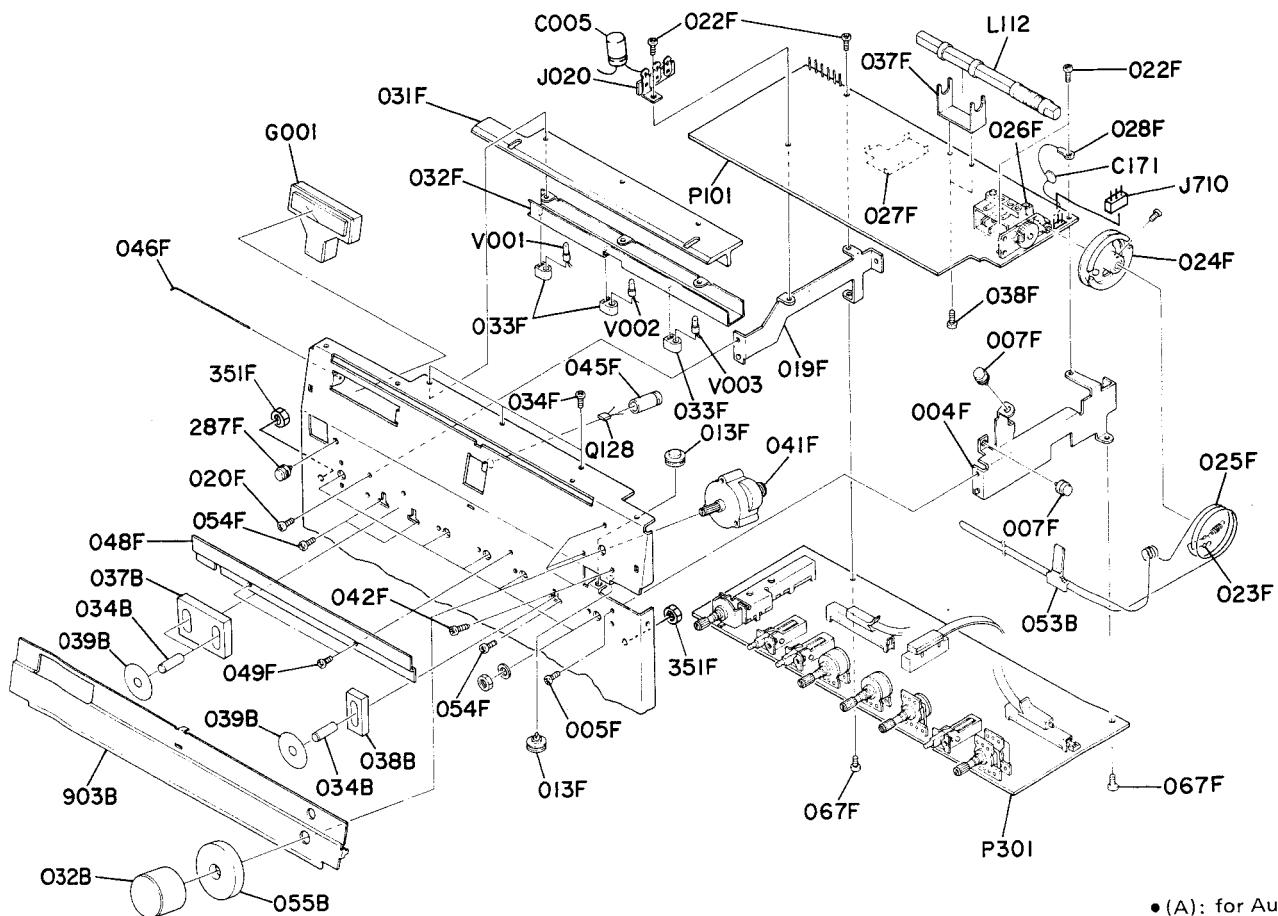


- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	
	A	E			
011B	1	1	4282063030	Escutcheon, Meter	
012B	2	2	51100306B9	B.H.M. Screw	B3 x 6
034B	2	2	4282154030	Knob	
035B	1	1	4282154040	Knob, Tape Selector	
036B	1	1	4282056010	Buffer	
039B	2	2	4282107030	Sheet	
040B	1	1	4282107050	Sheet	
041B	1	1	2259154040	Knob, Power	
044B	1	1	3448154130	Knob, Dolby	
001F	1	1	4282105010	Chassis	
053F	2	2	51060305A9	P.H.M. Screw	P3 x 5
054F	2	2	51060305A9	P.H.M. Screw	P3 x 5
055F	4	4	51100306A9	B.H.M. Screw	B3 x 6
061F	1	1	4282160060	Bracket, Mic Jack	
062F	2	2	51100306A9	B.H.M. Screw	B3 x 6
063F	1	1	4282160070	Bracket, Headphone	
064F	1	1	51100306A9	B.H.M. Screw	B3 x 6
068F	3	3	3426056020	Buffer	

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	
	A	E			
069F	1	1	4214271020	Holder	
070F	1	1	4282160130	Bracket	
071F	1	1	51100306A9	B.H.M. Screw	B3 x 6
072F	2	2	51100306A9	B.H.M. Screw	B3 x 6
073F	1	1	4282160130	Bracket	
074F	1	1	51100306A9	B.H.M. Screw	B3 x 6
J001	1	1	YJ01001110	Jack, Mic	
J002	1	1	YJ01001110	Jack, Mic	
J003	1	1	YJ01001210	Jack, Headphone	
G002	1	1	IM12094010	D.C. Meter	
Q001	1	1	HI10014020	L.E.D.	LN217RP
S001	1	1	SP02010340	Push Switch, Dolby	
△S002	1	1	SP02010230	Push Switch, Power	
C001	1	1	DK17103300	Ceramic Cap.	0.01μF ±20%
C002	1	1	DK17103300	Ceramic Cap.	0.01μF ±20%

### 11.3 [P03-99] FRONT BRACKET AND ELECTRICAL PARTS

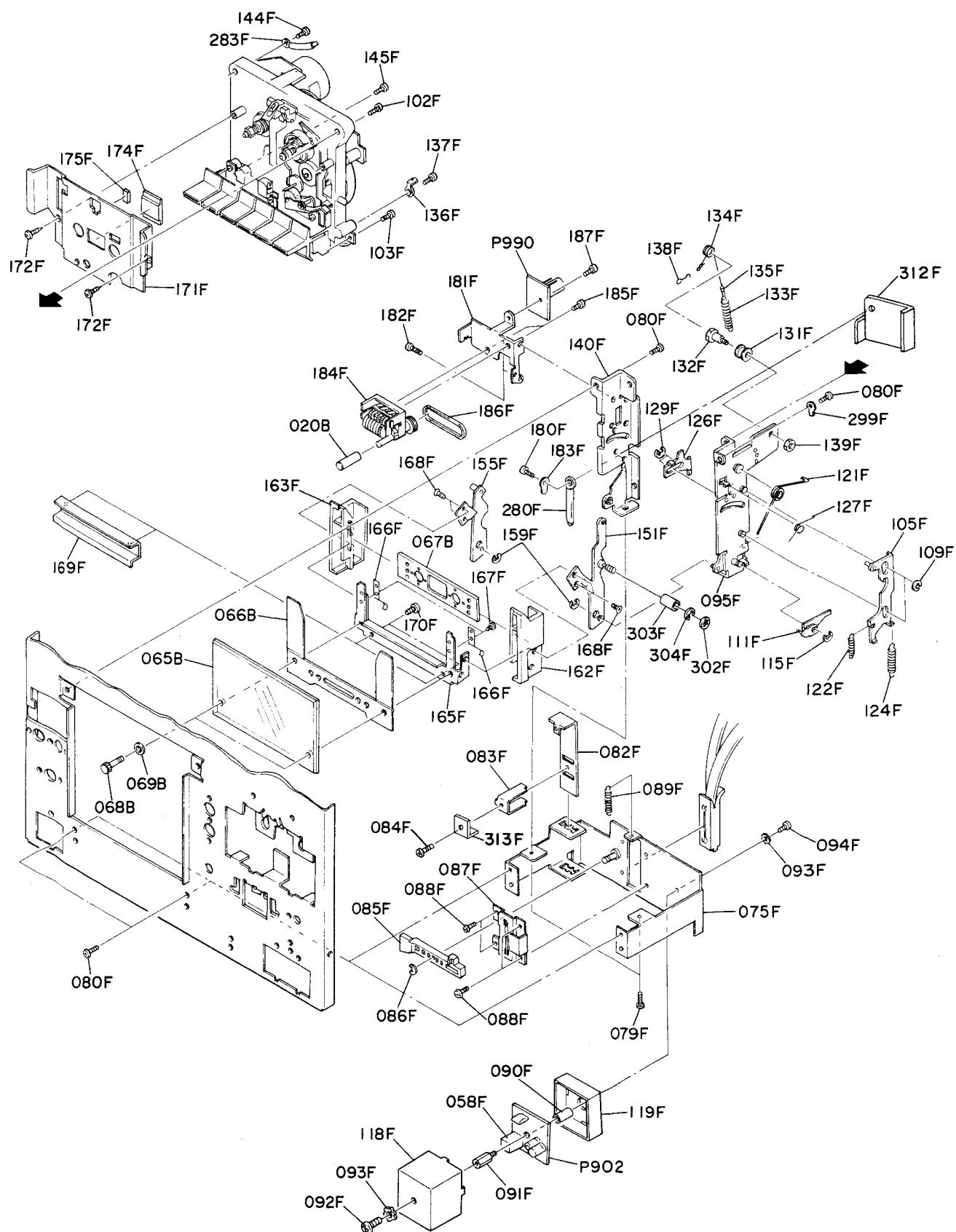


- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	
	A	E			
032B	1	1	4282154050	Knob, Tuning	
034B	3	3	4282154030	Knob	
037B	1	1	4282056020	Buffer	
038B	1	1	4282056030	Buffer	
039B	3	3	4282107030	Sheet	
053B	1	1	4282103010	Pointer	
055B	1	1	4282056040	Buffer	
903B	1	1	4282302020	Dial Plate	
004F	1	1	4282160010	Bracket, (R)	
005F	1	1	51100306A9	B.H.M. Screw	B3 x 6
007F	2	2	2276262500	Pulley	
013F	2	2	2286262500	Pulley	
019F	1	1	4282160020	Bracket, (L)	
020F	1	1	51100306A9	B.H.M. Screw	B3 x 6
022F	4	4	51100306A9	B.H.M. Screw	B3 x 6
023F	1	1	56302030G0	Eyelet	
024F	1	1	4282159010	Drum	
025F	1	1	72040805A0	String (140)	
026F	1	1	3620109010	Shield	
027F	1	1	4136109040	Shield	
028F	1	1	62031340W0	Lug	
031F	1	1	4282158030	Window, Dial	
032F	1	1	4282274010	Reflector	
033F	3	3	4123259010	Bushing	

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION		
	A	E				
034F	3	3	51102605A0	B.H.M. Screw	B2.6	x 5
037F	1	1	3435271010	Holder		
038F	2	2	51102605A0	B.H.M. Screw	B2.6	x 5
041F	1	1	4282273010	Flywheel, Tuning		
042F	3	3	51280308B0	B.H. Tapped Screw	B3	x 8
045F	1	1	4214271020	Holder		
046F	1	1	4282114010	Stopper		
048F	1	1	4282051010	Guide		
049F	2	2	51100306A9	B.H.M. Screw	B3	x 6
054F	3	3	51060305A9	P.H.M. Screw	P3	x 5
067F	2	2	51100306A9	B.H.M. Screw	B3	x 6
287F	1	1	2276262500	Pulley		
351F	2	2	53110303A9	Hexagon Nut		
G001	1	1	IM11052010	D.C. Meter, Tuning		
△V001	1	1	IN10140070	Lamp	110mA	14V
△V002	1	1	IN10140070	Lamp	110mA	14V
△V003	1	1	IN10140070	Lamp	110mA	14V
J020	1	1	YL01030230	Terminal		
L112	1	1	LF11200630	Antenna Coil		
Q128	1	1	HI10014020	L.E.D.	LN217RP	
C171	1	1	DD15221370	Ceramic Cap.	220pF	±5%
C005	1	1	EA10701630	Elect Cap.	100μF	16V
J710	1	1	YJ06001040	Jack (3P)		

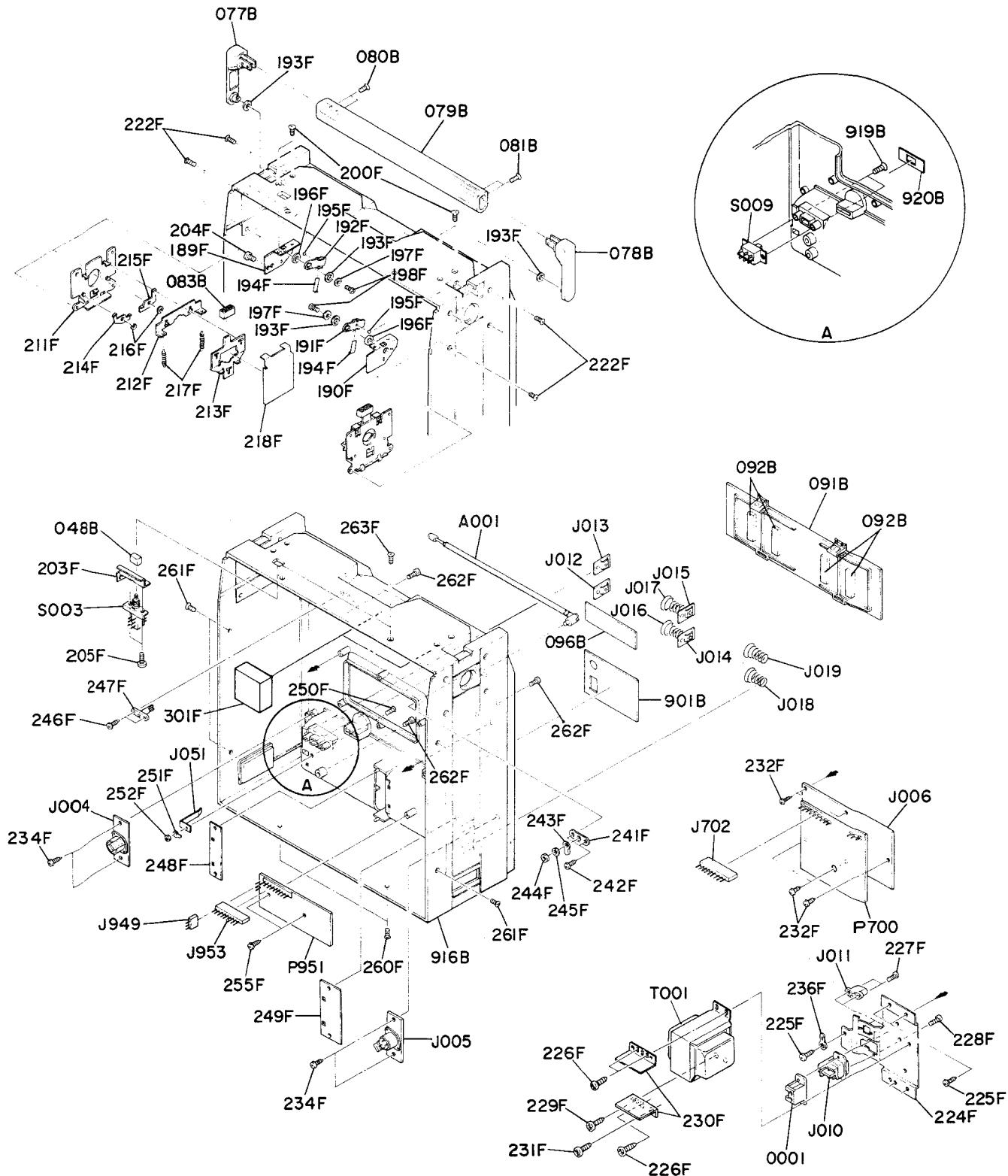
11.4 [P04-99] ASSOCIATED MECHANISM FOR CASSETTE TAPE OPERATION



- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E				A	E		
020B	1	1	3448067090	Cap, Counter	139F	1	1	53110303A9	Hexagon Nut
065B	1	1	4276158010	Window	140F	1	1	4265160510	Bracket, K (L)
066B	1	1	4276063030	Escutcheon	144F	1	1	51100308A9	B.H.M. Screw
067B	1	1	4276063040	Escutcheon	145F	1	1	51100306A9	B.H.M. Screw
068B	2	2	4276112010	Shaft	151F	1	1	4265002550	Arm, K (R)
069B	2	2	59046502G9	Washer	155F	1	1	4265002540	Arm, K (L)
058F	1	1	4282109060	Shield	159F	2	2	64000200R0	RG Ring, E Type
075F	1	1	4282160500	Bracket	162F	1	1	4265271010	Holder (R)
079F	2	2	51100306A9	B.H.M. Screw	163F	1	1	4265271020	Holder (L)
080F	4	4	51100306A9	B.H.M. Screw	165F	1	1	4265160110	Bracket
082F	1	1	4282354070	Lever	166F	2	2	4265115050	Spring
083F	1	1	4282115010	Spring	167F	2	2	51062605S0	P.H.M. Screw
084F	1	1	51100306A9	B.H.M. Screw	168F	4	4	51042605S0	F.H.M. Screw
085F	1	1	4282354080	Lever	169F	1	1	4276053010	Cover
086F	1	1	64000300R0	RG Ring, E Type	170F	2	2	51380206T0	P.H. Tapped Screw
087F	1	1	4282160150	Bracket	171F	1	1	4265053020	Cover, Mecha
088F	4	4	51100306A9	B.H.M. Screw	172F	2	2	51382606K0	P.H. Tapped Screw
089F	1	1	4282115030	Spring	174F	1	1	4197158010	Window
090F	1	1	4282101010	Support	175F	1	1	4265118010	Spacer
091F	1	1	4282101020	Support	180F	1	1	51100306A9	B.H.M. Screw
092F	1	1	51100306A9	B.H.M. Screw	181F	1	1	4282160120	Bracket
093F	2	2	54050300R0	T.L. Washer OR	182F	2	2	51100305A9	B.H.M. Screw
094F	1	1	51100308A9	B.H.M. Screw	183F	1	1	62031650W0	Lug
095F	1	1	4265160520	Bracket, K (R)	184F	1	1	4197052010	Counter
102F	1	1	51100308A9	B.H.M. Screw	185F	2	2	51100305A9	B.H.M. Screw
103F	1	1	51060306A9	P.H.M. Screw	186F	1	1	4197264010	Belt
105F	1	1	4265258510	Hook, Door (K)	187F	1	1	51100306A9	B.H.M. Screw
109F	2	2	64000200R0	RG Ring, E Type	280F	1	1	4220005020	Clamper
111F	1	1	4265002520	Arm, Inter Lock (K)	283F	1	1	4220005020	Clamper
115F	1	1	64002500R0	RG Ring, E Type	299F	1	1	62031650W0	Lug
118F	1	1	4282109040	Shield	302F	1	1	64020200Q0	RG Ring, CS Type
119F	1	1	4282109050	Shield	303F	1	1	4265055010	Collar
121F	1	1	4265115030	Spring, Lock	304F	1	1	64000200R0	RG Ring, E Type
122F	1	1	4265115040	Spring	312F	1	1	4282160180	Bracket
124F	1	1	4197115030	Spring	313F	1	1	4282160190	Bracket
126F	1	1	4265354010	Lever					
127F	1	1	4265115070	Spring					
129F	2	2	64000200R0	RG Ring, E Type					
131F	1	1	4197262010	Pulley					
132F	1	1	4197112040	Shaft					
133F	1	1	4197115020	Spring					
134F	1	1	72081604A0	String (20)					
135F	1	1	56382540G0	Eyelet					
136F	1	1	62031650W0	Lug					
137F	1	1	51280306B0	B.H. Tapped Screw					
138F	1	1	4197258030	Hook					

## 11.5 [P05-99] REAR CASE AND BATTERY CASE

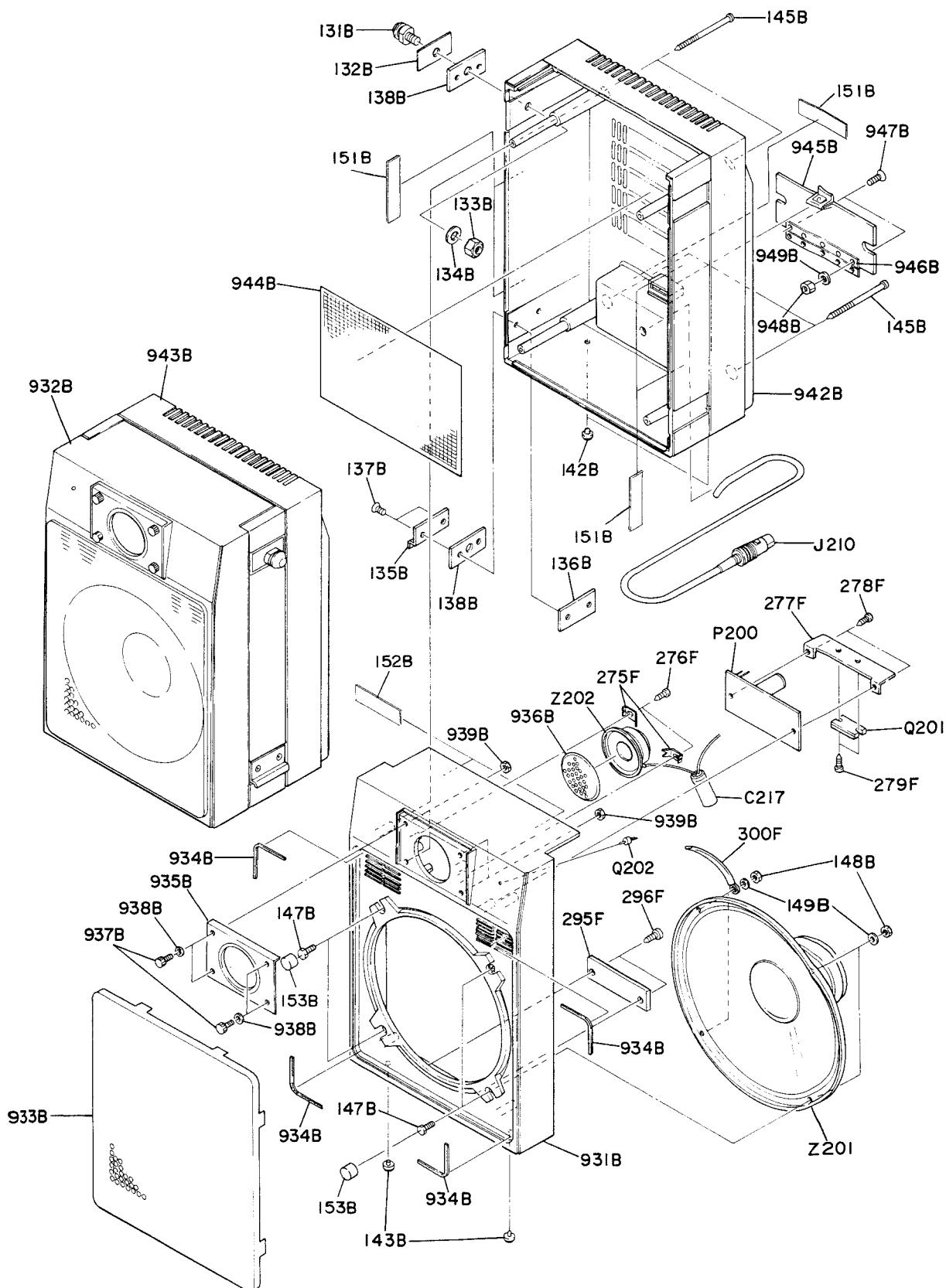


• (A): for Australia  
• (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
B	1	1	4282257440	Lid Assembly, Rear
B1	1	1	4282257450	Lid Assembly, Rear
077B	1	1	4282104010	Retainer
078B	1	1	4282104010	Retainer
079B	1	1	4282253010	Handle
080B	2	2	51100306S9	B.H.M. Screw B3 x 6
081B	2	2	51100306S9	B.H.M. Screw B3 x 6
083B	2	2	4282154010	Knob
901B	1	1	4282265070	Indicator
901B	1	1	4282265060	Indicator
916B	1	1	4282257060	Lid, Rear
919B	2	2	51040312S9	F.H.M. Screw F3 x 12
920B	1	1	4174265100	Indicator
189F	1	1	4282160090	Bracket, (L)
190F	1	1	4282160100	Bracket, (R)
191F	1	1	4282354010	Lever, (R)
192F	1	1	4282354020	Lever, (L)
193F	4	4	59071105G9	Washer
194F	2	2	4123115020	Spring
195F	2	2	61030010T0	Ball
196F	2	2	4282118010	Spacer
197F	2	2	54020401E0	Flat Washer, P.
198F	2	2	51100306A9	B.H.M. Screw B3 x 6
199F	2	2	59071102G9	Washer For Handle
200F	4	4	51140306S9	O.C.H.M. Screw 3 x 6
211F	2	2	4282160510	Bracket
212F	2	2	4282354030	Lever
213F	2	2	4282354040	Lever
214F	2	2	4282354050	Lever
215F	2	2	4282354060	Lever
216F	4	4	64000300R0	RG Ring, E Type
217F	4	4	4282115020	Spring
218F	2	2	4282053030	Cover
222F	8	8	51140306S9	O.C.H.M. Screw 3 x 6
248F	1	1	4282053040	Cover
249F	1	1	4282053050	Cover
C	1	1	4282257470	Battery Lid Assembly
091B	1	1	4282257030	Lid, Battery
092B	4	4	3411056050	Buffer
048B	1	1	2904154020	Knob, Dial Light
096B	1	1	3333861020	Label
203F	1	1	4282160140	Bracket
204F	1	1	51100306A9	B.H.M. Screw B3 x 6
205F	2	2	51100306A9	B.H.M. Screw B3 x 6
224F	1	1	4282160040	Bracket
225F	3	3	51280408B0	B.H. Tapped Screw B4 x 8
226F	3	3	51280308B0	B.H. Tapped Screw B3 x 8
227F	2	2	51060206A0	P.H.M. Screw P2 x 6
228F	2	2	51062610A0	P.H.M. Screw P2.6 x 10
229F	1	1	51280412B0	B.H. Tapped Screw B4 x 12
230F	2	2	4282104040	Retainer
231F	1	1	51280312B0	B.H. Tapped Screw B3 x 12
232F	5	5	51280308B0	B.H. Tapped Screw B3 x 8
234F	4	4	51280308B0	B.H. Tapped Screw B3 x 8
236F	1	1	62041760W0	Lug
241F	1	1	4282104030	Retainer

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
242F	2	2	51280306B0	B.H. Tapped Screw B3 x 6
243F	1	1	62051870W0	Lug
244F	1	1	53110503A9	Hexagon Nut
245F	1	1	54040502N0	Spring Washer
246F	2	2	51280308B0	B.H. Tapped Screw B3 x 8
247F	1	1	4282271020	Holder
250F	1	1	51040206S0	F.H.M. Screw F2 x 6
251F	1	1	62021030W0	Lug
252F	1	1	53110203E0	Hexagon Nut
255F	2	2	51280308B0	B.H. Tapped Screw B3 x 8
260F	2	2	51140308S9	O.C.H.M. Screw 3 x 8
261F	4	4	51140308S9	O.C.H.M. Screw 3 x 8
262F	3	3	51100306S9	B.H.M. Screw B3 x 6
263F	2	2	51140306S9	O.C.H.M. Screw 3 x 6
301F	2	2	4182051020	Buffer
0001	1	1	3370053010	Cover, AC Inlet
A001	1	1	YR06080030	Whip Antenna
J004	1	1	BY02040010	Terminal, Jack Board
J005	1	1	BY02040010	Terminal, Jack Board
J006	1	1	BY09090010	Jack Board
▲J010	1	1	YJ04000500	Jack, AC Inlet
J011	1	1	YJ04000550	Jack, EXT DC
J012	1	1	YL12010710	Terminal (+)
J013	1	1	YL12010710	Terminal (+)
J014	1	1	YL12010710	Terminal (+)
J015	1	1	YL12010710	Terminal (+)
J016	1	1	YL11010090	Terminal (-)
J017	1	1	YL11010090	Terminal (-)
J018	1	1	YL11010090	Terminal (-)
J019	1	1	YL11010090	Terminal (-)
J051	1	1	YL14010150	Terminal, Rechargeable
▲T001	1	1	TS16005130	Power Transformer
▲T001	1	1	TS16005100	Power Transformer
J702	1	1	YJ06001430	Jack (9P)
J949	1	1	YJ06001240	Jack (3P)
J953	1	1	YJ06001430	Jack (9P)
S003	1	1	SP02010420	Push Switch, Dial Light/Batt.
▲S009	1	1	SS02020510	Slide Switch 110V/220V

## 11.6 [P06-99] SPEAKER BOX



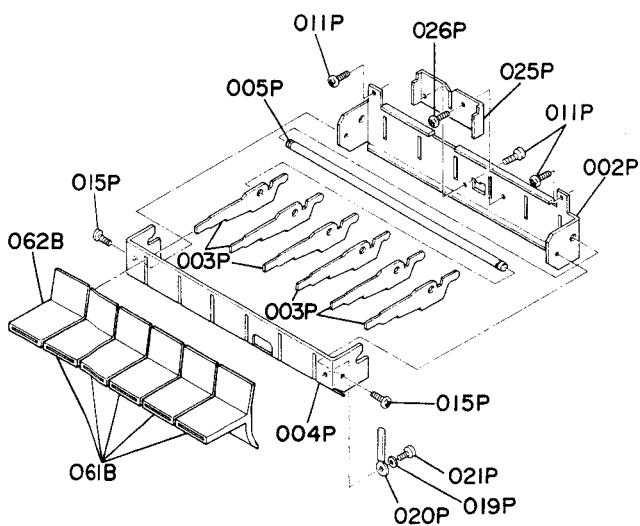
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
D	1	1	4282064420	Case Assembly, Speaker (R)
143B	2	2	3441057010	Leg
147B	4	4	52010415S9	H. Head Bolt
152B	3	3	4282107060	Sheet
153B	4	4	4282118020	Spacer
931B	1	1	4282064030	Case
933B	1	1	4282202010	Net
934B	4	4	4282107040	Sheet
935B	1	1	4282063040	Escutcheon
936B	1	1	4282202020	Net
937B	4	4	51214079E9	L.K. Head Screw
938B	4	4	59035402G9	Washer
939B	4	4	53110301A9	Hexagon Nut
E	1	1	4282064430	Case Assembly, Speaker (L)
143B	2	2	3441057010	Leg
147B	4	4	52010415S9	H. Head Bolt
152B	3	3	4282107060	Sheet
153B	4	4	4282118020	Spacer
932B	1	1	4282064040	Case
933B	1	1	4282202010	Net
934B	4	4	4282107040	Sheet
935B	1	1	4282063040	Escutcheon
936B	1	1	4282202020	Net
937B	4	4	51214079E9	L.K. Head Screw
938B	4	4	59035402G9	Washer
939B	4	4	53110301A9	Hexagon Nut
F	1	1	4282257420	Lid Assembly, Speaker (R)
131B	1	1	4282112010	Shaft
132B	1	1	4282063060	Escutcheon
133B	1	1	53110801A9	Hexagon Nut
134B	1	1	54020801AO	Flat Washer, P.
135B	1	1	4282104020	Retainer
136B	1	1	4282160110	Bracket
137B	2	2	51040310E9	F.H.M. Screw
138B	2	2	4282107010	Sheet
142B	2	2	3441057010	Leg
942B	1	1	4282257020	Lid
944B	1	1	4282202040	Net
945B	1	1	4282257040	Lid, Speaker Wire
946B	1	1	2366153010	Hinge
947B	2	2	51140206S0	O.C.H.M. Screw
948B	2	2	53110203H0	Hexagon Nut
949B	2	2	54020201S0	Washer

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	
	A	E			
G	1	1	4282257430	Lid Assembly, Speaker (L)	
131B	1	1	4282112010	Shaft	
132B	1	1	4282063060	Escutcheon	
133B	1	1	53110801A9	Hexagon Nut	
134B	1	1	54020801A0	Flat Washer, P.	
135B	1	1	4282104020	Retainer	
136B	1	1	4282160110	Bracket	
137B	2	2	51040310E9	F.H.M. Screw	F3 x 10
138B	2	2	4282107010	Sheet	
142B	2	2	3441057010	Leg	
943B	1	1	4282257050	Lid	
944B	1	1	4282202040	Net	
945B	1	1	4282257040	Lid, Speaker Wire	
946B	1	1	2366153010	Hinge	
947B	2	2	51140206S9	O.C.H.M. Screw	2 x 6
948B	2	2	53110203H0	Hexagon Nut	
949B	2	2	54020201S0	Washer	
145B	8	8	51400370T0	B.H. Tapped Screw	
148B	8	8	53110401A9	Hexagon Nut	
149B	8	8	54020401A0	Flat Washer, P.	
151B	16	16	4282107060	Sheet	
275F	4	4	4170005010	Clamper	
276F	4	4	51280308B0	B.H. Tapped Screw	B3 x 8
277F	2	2	4282267010	Heatsink	
278F	4	4	51280310B0	B.H. Tapped Screw	B3 x 10
279F	4	4	51280310B0	B.H. Tapped Screw	B3 x 10
295F	2	2	2858005010	Clamper	
296F	4	4	51280308B0	B.H. Tapped Screw	B3 x 8
300F	4	4	4220005040	Clamper	
▲Q201	2	2	HC10011020	IC	AN7154
Q202	2	2	H110004030	L.E.D.	SCP132B
Z201	2	2	QK02001010	Speaker, Woofer	
Z202	2	2	QK00501100	Speaker, Tweeter	
C217	2	2	EQ22505020	Elect Cap.	2.2μF 50V
J210	2	2	YB01200070	Connective Cord	

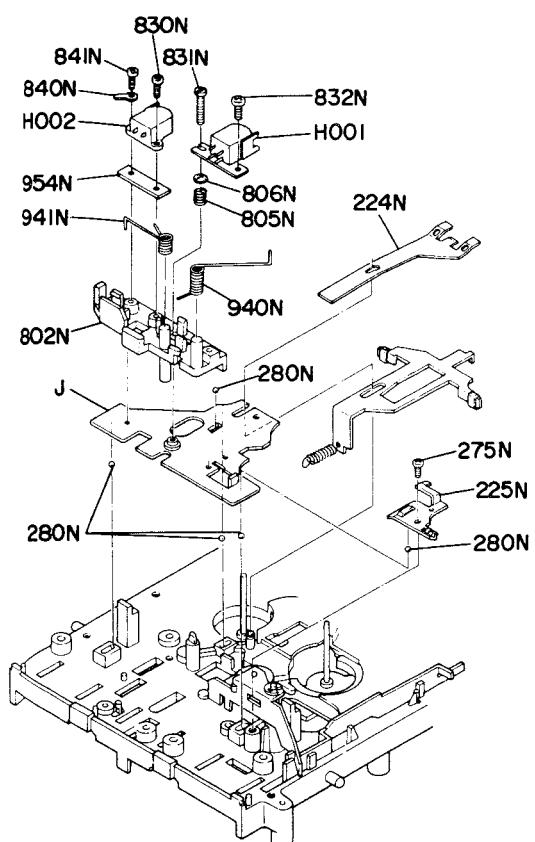
## 11.7 [P07-99] BUTTONS FOR TAPE MECHANISM OPERATION

- (A): for Australia
- (E): for Europe



REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	
	A	E			
061B	5	5	4276270030	Button	
062B	1	1	4276270040	Button	
002P	1	1	4380160010	Bracket	
003P	6	6	4380354070	Lever	
004P	1	1	4380051010	Guide	
005P	1	1	4380112030	Shaft	
011P	3	3	51300310B0	P.H. Tapped Screw	P3 x 10
015P	2	2	51062603A0	P.H.M. Screw	P2.6 x 3
019P	1	1	54052600R0	T.L. Washer, OR	
020P	1	1	1210005010	Clamper	
021P	1	1	51062604A0	P.H.M. Screw	P2.6 x 4
025P	1	1	4383104040	Retainer	
026P	1	1	51062603A0	P.H.M. Screw	P2.6 x 3

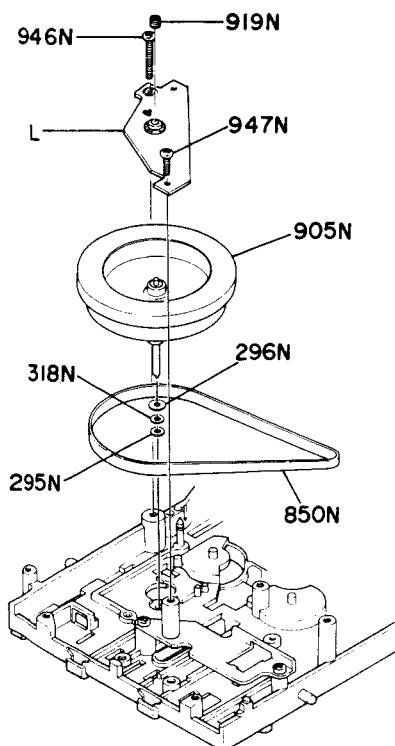
## 11.8 [P08-99] HEAD CHASSIS



REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
J	1	1	4380105410	Chassis, Head
224N	1	1	4380115010	Spring
225N	1	1	4367115170	Spring
275N	1	1	51300308B0	P.H. Tapped Screw P3 x 8
280N	5	5	61020010T0	Ball
802N	1	1	4367160010	Bracket
805N	1	1	4383115030	Spring
806N	1	1	3444118070	Spacer
830N	1	1	51100210A0	B.H.M. Screw B2 x 10
831N	1	1	4397254090	Pin
832N	1	1	51100210A0	B.H.M. Screw B2 x 10
840N	1	1	62021030W0	Lug
841N	1	1	51100212A0	B.H.M. Screw B2 x 12
940N	1	1	4367115040	Spring
941N	1	1	4367115050	Spring
954N	1	1	4367118070	Spacer
H001	1	1	LH42851050	Rec/Play Head
H002	1	1	LH31000490	Erase Head

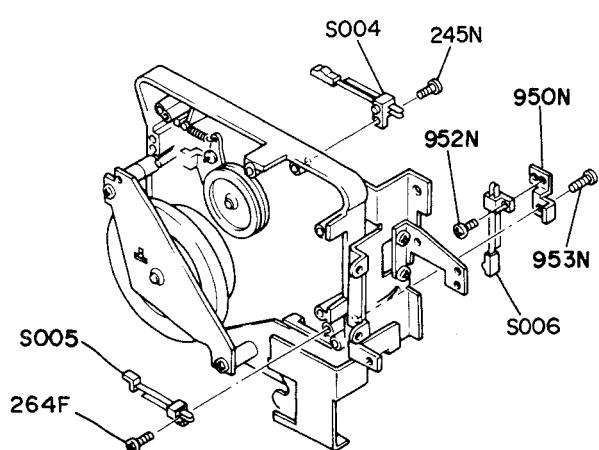
## 11.9 [P09-99] FLYWHEEL

• (A): for Australia  
• (E): for Europe



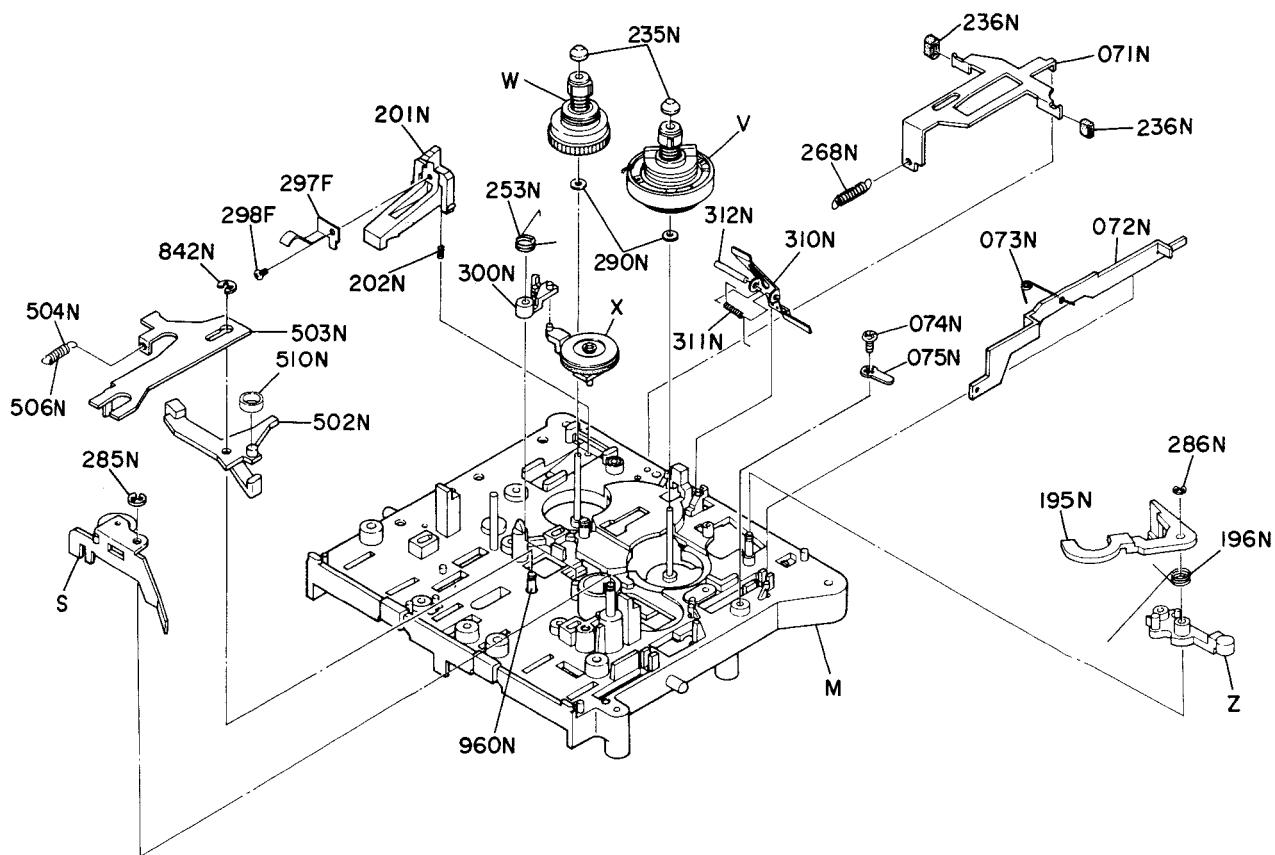
REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
L	1	1	4380104400	Retainer Assembly, Flywheel
295N	1	1	59264702G9	Washer
296N	1	1	59260702G9	Washer
318N	1	1	59264705G9	Washer
850N	1	1	4380264030	Belt
905N	1	1	4380273500	Flywheel
919N	1	1	3483164020	Adjuster
946N	1	1	51300325B0	P.H. Tapped Screw P3 x 25
947N	1	1	51100308A9	B.H.M. Screw B3 x 8

## 11.10 [P10-99] SWITCH LOCATION FOR TAPE MECHANISM OPERATION



REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
264F	1	1	51400208P0	B.H. Tapped Screw B2 x 8
245N	1	1	51302608B0	P.H. Tapped Screw P2.6 x 8
950N	1	1	4383160040	Bracket
952N	2	2	51060205A0	P.H.M. Screw P2 x 5
953N	1	1	51300308B0	P.H. Tapped Screw P3 x 8
S004	1	1	SM01010680	Mini Switch, Motor
S005	1	1	SM01010660	Mini Switch, Play Muting
S006	1	1	SM01010580	Mini Switch, Rec Muting

## 11.11 [P11-99] PARTS ASSEMBLED ON THE TOP CHASSIS

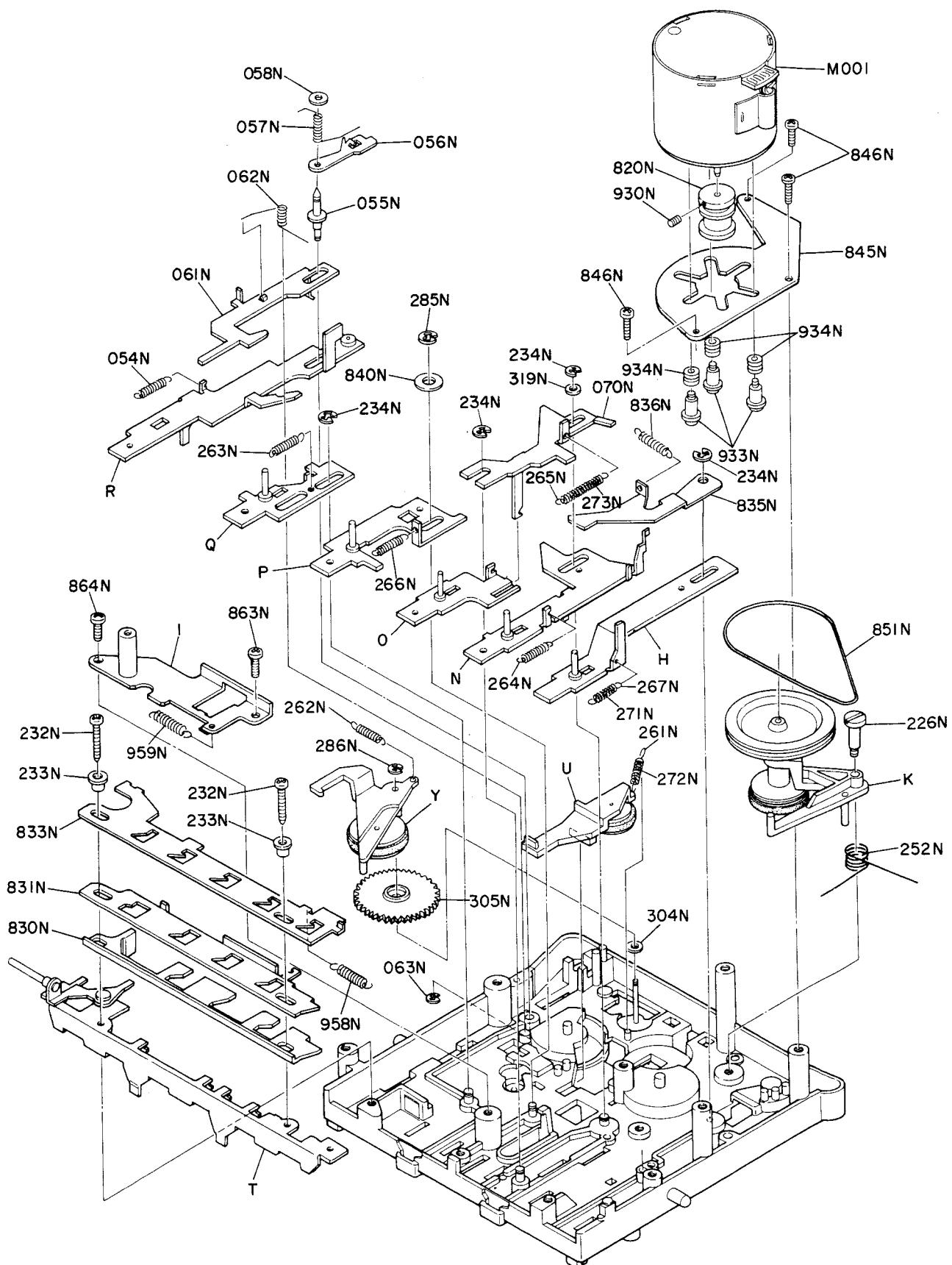


- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
M	1	1	4380105400	Chassis Assembly
S	1	1	4367002400	Pinch Roller Assembly
V	1	1	4367004400	Table Assembly, Take Up
W	1	1	4367004410	Table Assembly, Supply
X	1	1	4367002410	Arm Assembly
Z	1	1	4380354460	Lever Assembly, TMS
071N	1	1	4367354090	Lever
072N	1	1	4367354120	Lever
073N	1	1	4380115120	Spring
074N	1	1	51282608B0	B.H. Tapped Screw B2.6 x 8
075N	1	1	62261240W0	Lug
195N	1	1	4367002050	Arm, TMS Sensor
196N	1	1	4367115130	Spring
201N	1	1	4367354080	Lever
202N	1	1	4380115060	Spring
235N	2	2	4367067010	Cap

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
236N	2	2	4367263010	Brake
253N	1	1	4367115310	Spring
268N	1	1	4367115210	Spring
285N	1	1	64002500R0	RG Ring, E Type
286N	1	1	64001500R0	RG Ring, E Type
290N	2	2	59020402G9	Washer
300N	1	1	4367354110	Lever
310N	1	1	4383115010	Spring
311N	1	1	4380115030	Spring
312N	1	1	4380112010	Shaft
502N	1	1	4367002090	Arm, Cue Review
503N	1	1	4367354150	Lever
504N	1	1	4367115320	Spring
506N	1	1	4367056050	Buffer
508N	1	1	4367055040	Collar
510N	1	1	4367055050	Collar
842N	1	1	64002500R0	RG Ring, E Type
960N	1	1	4367112190	Shaft
297F	1	1	4197115060	Spring
298F	1	1	51382606T0	P.H. Tapped Screw P2.6 x 6

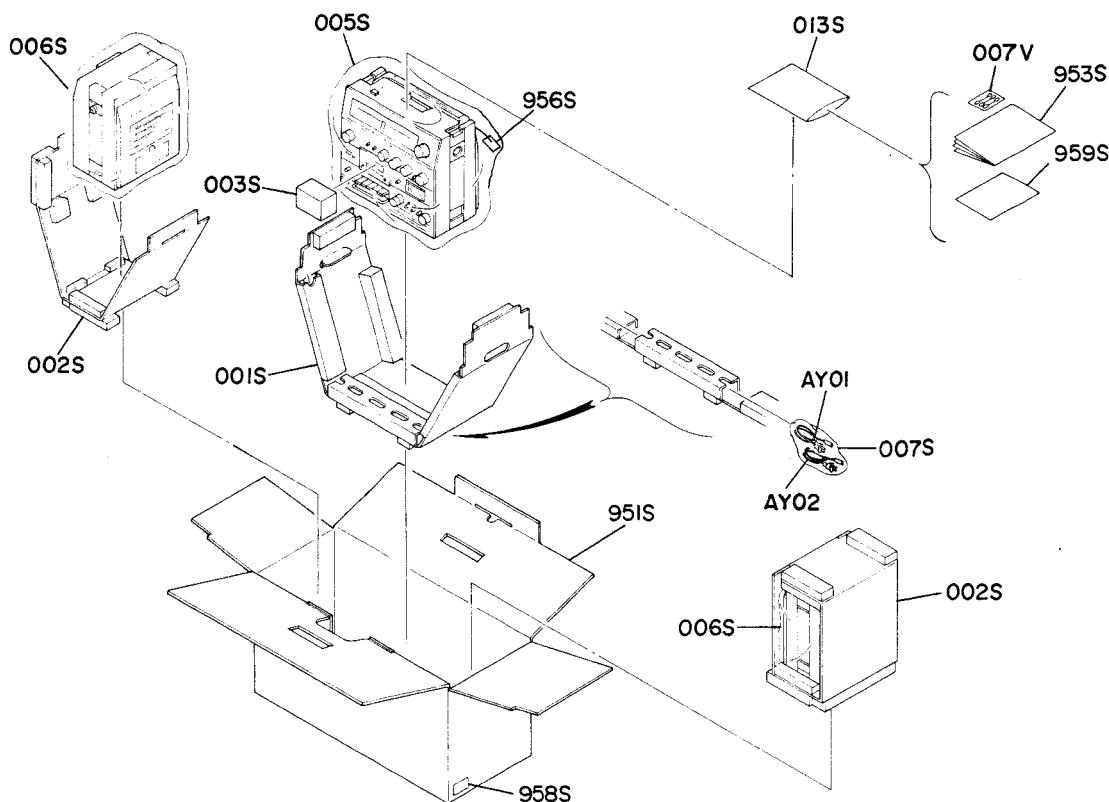
11.12 [P12-99] PARTS ASSEMBLED ON THE REVERSE CHASSIS



- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E				A	E		
H	1	1	4399354400	Lever Assembly, Rec.	070N	1	1	4367354160	Lever, Head Chassis
I	1	1	4380160410	Bracket Assembly, Switch	226N	1	1	4367112180	Shaft
K	1	1	4380001400	Idler Assembly	232N	2	2	51300312B0	P.H. Tapped Screw P3 x 12
N	1	1	4380354400	Lever Assembly, Rew	233N	2	2	4382055010	Collar, Lock Cam
O	1	1	4380354410	Lever Assembly, Play	234N	4	4	64000300R0	RG Ring, E Type
P	1	1	4380354420	Lever Assembly, F.F.	252N	1	1	4380115050	Spring
Q	1	1	4380354430	Lever Assembly, Stop	261N	1	1	4367115090	Spring
R	1	1	4380354440	Lever Assembly, Pause	262N	1	1	4367115120	Spring
T	1	1	4383051400	Guide Assembly, Push Lever	263N	1	1	4367115250	Spring
U	1	1	4367354450	FF Idler Assembly	264N	1	1	4367115340	Spring
Y	1	1	4367002410	Arm Assembly, Tms Idler	265N	1	1	4367115270	Spring
054N	1	1	4367115210	Spring	266N	1	1	4367115280	Spring
055N	1	1	4367112130	Shaft	267N	1	1	4380115070	Spring
056N	1	1	4367054030	Cam Pause Lock	271N	1	1	4367056020	Buffer
057N	1	1	4367115140	Spring	272N	1	1	4367056030	Buffer
058N	1	1	59020805G9	Washer	273N	1	1	4367056020	Buffer
061N	1	1	4367354070	Lever, Eject	285N	1	1	64002500R0	RG Ring, E Type
062N	1	1	4380115080	Spring	286N	1	1	64001500R0	RG Ring, E Type
063N	1	1	64001500R0	RG Ring, E Type	304N	1	1	4367118060	Spacer
					305N	1	1	4367058500	Gear
					319N	1	1	59046501G9	Washer
					820N	1	1	4380262010	Pulley
					830N	1	1	4396054010	Cam, Stop/Eject
					831N	1	1	4396054020	Cam, Lock
					833N	1	1	4396054030	Cam, Rec Lock
					835N	1	1	4399002010	Arm, Inter Lock
					836N	1	1	4399115010	Spring
					840N	1	1	54110159A0	Flat Washer, L.
					845N	1	1	4380160030	Bracket, DC Motor
					846N	3	3	51300308B0	P.H. Tapped Screw P3 x 8
					851N	1	1	4380264050	Belt, TMS
					863N	1	1	51300308B0	P.H. Tapped Screw P3 x 8
					864N	1	1	51300310B0	P.H. Tapped Screw P3 x 10
					930N	1	1	51690305Q9	Socket Screw, HP.
					933N	3	3	4367112150	Shaft
					934N	3	3	4383259010	Bushing
					958N	1	1	4396115030	Spring
					959N	1	1	4396115030	Spring
					▲M001	1	1	MM11200140	D.C. Motor V. Servo 12V 2200rpm CCW

## 1.13 [H01-99] PACKING MATERIALS



• (A): for Australia  
 • (E): for Europe

REF. DESIG.	Q'TY A E		PART NO.	DESCRIPTION
001S	1	1	4282809010	Cushion
002S	2	2	4282809020	Cushion
003S	1	1	4282809040	Cushion
005S	1	1	9014044200	Polyethylene Bag
006S	2	2	9012844200	Polyethylene Bag
007S	1	1	9011020010	Polyethylene Bag
013S	1	1	9013025010	Polyethylene Bag
951S	1	1	4282801030	Packing Case
953S	1	1	4282851010	Instructions
956S	1	1	9560000040	Hang Tug
958S	2		9526019030	Serial No. Card
958S		2	9526019060	Serial No. Card
959S	1		9631000090	Guarantee Card

REF. DESIG.	Q'TY A E		PART NO.	DESCRIPTION
007V	1	1	4136071010	Cleaner
AY01	1	1	ZC02007020	A.C. Power Cord
AY02	1	1	ZC02006020	A.C. Power Cord
AY02		1	ZC01805010	A.C. Power Cord

## 11.14 ELECTRICAL PARTS

- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	E	A				E	A		
P101	1	1	YK42821410	P101-TUNER CIRCUIT BOARD	C151	1	1	EA47505030	Elect 4.7μF 50V
	1	1	ZZ42828410	P.W. Board, Tuner	C152	1	1	EA47505030	Elect 4.7μF 50V
				P.W. Board Assembly	C153	1	1	EA47505030	Elect 4.7μF 50V
C101	1	1	DK18103310	P101-CAPACITORS	C154	1	1	DD10050370	Ceramic 5pF ±0.25pF
C102	1	1	DD15150300	Ceramic 0.01μF ±80% -20%	C155	1	1	DF16103300	Film 0.01μF ±10%
C104	1	1	DD15510330	Ceramic 15pF ±5%	C156	1	1	DF16103300	Film 0.01μF ±10%
C105	1	1	DD10050370	Ceramic 51pF ±5%	C157	1	1	DK16102300	Ceramic 100pF ±10%
C106	1	1	DD10020300	Ceramic 5pF ±0.25pF	C158	1	1	DK18403320	Ceramic 0.04μF ±80% -20%
C107	1	1	DK10103310	Ceramic 2pF ±0.25pF	C159	1	1	DK17103300	Ceramic 0.01μF ±20%
C108	1	1	DK18223320	Ceramic 0.01μF ±80% -20%	C160	1	1	DK18223320	Ceramic 0.022μF ±80% -20%
C109	1	1	DK18223320	Ceramic 0.022μF ±80% -20%	C161	1	1	EA47505030	Elect 4.7μF 50V
C110	1	1	DK16102300	Ceramic 0.022μF ±80% -20%	C162	1	1	EA22701030	Elect 220μF 10V
C111	1	1	DK18223320	Ceramic 1000pF ±10%	C163	1	1	DF16103300	Film 0.01μF ±10%
C112	1	1	DK18223320	Ceramic 0.022μF ±80% -20%	C164	1	1	DF16472300	Film 4700pF ±10%
C113	1	1	DK16102300	Ceramic 1000pF ±10%	C165	1	1	DK18403320	Ceramic 0.04μF ±80% -20%
C114	1	1	DK16102300	Ceramic 1000pF ±10%	C166	1	1	DK18403320	Ceramic 0.04μF ±80% -20%
C116	1	1	DK18403320	Ceramic 0.04μF ±80% -20%	C167	1	1	CA22400020	Variable Capacitor
C117	1	1	DK16102300	Ceramic 1000pF ±10%	C168	1	1	DK18403320	Ceramic 0.04μF ±80% -20%
C118	1	1	DK16102300	Ceramic 1000pF ±10%	C169	1	1	DD15300300	Ceramic 30pF ±5%
C119	1	1	DK18403320	Ceramic 1000pF ±10%	C170	1	1	DK18403320	Ceramic 0.04μF ±80% -20%
C120	1	1	DK18403320	Ceramic 0.04μF ±80% -20%	C171	1	1	DD15221370	Ceramic 220pF ±5%
C121	1	1	DD15331370	Ceramic 0.04μF ±80% -20%	C172	1	1	DK18403320	Ceramic 0.04μF ±80% -20%
C122	1	1	EA47505030	Ceramic 330pF ±5%	C173	1	1	DF16104300	Film 0.01μF ±10%
				Elect 4.7μF 50V	C174	1	1	DK18223320	Ceramic 0.022μF ±80% -20%
C123	1	1	DD15221370	Ceramic 4.7μF 50V	C175	1	1	DD15101330	Ceramic 100pF ±5%
C124	1	1	DD15221370	Ceramic 220pF ±5%	C176	1	1	EA47405030	Elect 0.47μF 50V
C125	1	1	DK18403320	Ceramic 0.04μF ±80% -20%					P101-RESISTORS (All Resistors are ±5% and 1/2W)
C126	1	1	EA47505030	Ceramic 0.04μF ±80% -20%	R101	1	1	GD05222140	2.2KΩ
C127	1	1	DK18403320	Ceramic 0.04μF ±80% -20%	R102	1	1	GD05561140	560Ω
C128	1	1	DD11100300	Ceramic 10pF ±0.5pF	R103	1	1	GD05222140	2.2KΩ
C129	1	1	DD11070300	Ceramic 7pF ±0.5pF	R104	1	1	GD0533140	33KΩ
C130	1	1	EA10505030	Ceramic 1μF 50V	R105	1	1	GD05330140	33Ω
C131	1	1	DD15150300	Ceramic 15pF ±5%	R106	1	1	GD05105140	1MΩ
C132	1	1	DD15360300	Ceramic 36pF ±5%	R107	1	1	GD05152140	1.5KΩ
C133	1	1	DD15510340	Ceramic 51pF ±5%	R108	1	1	GD05221140	220Ω
C134	1	1	DK18223320	Ceramic 0.022μF ±80% -20%	R109	1	1	GD05472140	4.7KΩ
C135	1	1	DK18403320	Ceramic 0.04μF ±80% -20%	R112	1	1	GD05222140	2.2KΩ
C136	1	1	DK18403320	Ceramic 0.04μF ±80% -20%	R113	1	1	GD05561140	560Ω
C137	1	1	DD15300300	Ceramic 30pF ±5%	R114	1	1	GD05561140	560Ω
C138	1	1	DK18403320	Ceramic 0.04μF ±80% -20%	R115	1	1	GD05561140	560Ω
C139	1	1	DK18403320	Ceramic 0.04μF ±80% -20%	R116	1	1	GD05684140	680KΩ
C140	1	1	EA22701030	Elect 220μF 10V	R117	1	1	GD05561140	560Ω
C141	1	1	EA33505030	Elect 3.3μF 50V	R118	1	1	GD05102140	1KΩ
C142	1	1	EA47405030	Elect 0.47μF 50V	R120	1	1	GD05561140	560Ω
C143	1	1	EA10505030	Elect 1μF 50V	R121	1	1	GD05222140	2.2KΩ
C144	1	1	EA10505030	Elect 1μF 50V	R122	1	1	GD05561140	560Ω
C145	1	1	EA10701030	Elect 100μF 10V	R123	1	1	GD05102140	1KΩ
C146	1	1	DF16473300	Film 0.047μF ±10%	R124	1	1	GD05470140	47Ω
C147	1	1	DF55471090	Film 470pF ±5%	R125	1	1	GD05153140	15KΩ
C148	1	1	DF16123300	Film 0.012μF ±10%	R126	1	1	GD05562140	5.6KΩ
C149	1	1	DF16123300	Film 0.012μF ±10%	R127	1	1	GD05561140	560Ω
C150	1	1	EA47505030	Elect 4.7μF 50V	R128	1	1	GD05100140	10Ω
					R129	1	1	GD0533140	330Ω
					R130	1	1	GD05334140	330KΩ

• (A): for Australia  
• (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	E	A		
R131	1	1	GD05221140	220Ω
R132	1	1	GD05821140	820Ω
R133	1	1	GD05101140	100Ω
R134	1	1	GD05562140	5.6KΩ
R135	1	1	GD05105140	1MΩ
R136	1	1	GD05102140	1KΩ
R137	1	1	GD05102140	1KΩ
R138	1	1	GD05333140	33KΩ
R139	1	1	GD05222140	2.2KΩ
R140	1	1	GD05103140	10KΩ
R141	1	1	GD05104140	100KΩ
R142	1	1	RA05040090	500KΩ
R143	1	1	GD05103140	10KΩ
R144	1	1	GD05224140	220KΩ
R145	1	1	GD05103140	10KΩ
R146	1	1	GD05334140	330KΩ
R147	1	1	GD05471140	470Ω
R148	1	1	GD05221140	220Ω
R149	1	1	GD05101140	100Ω
R150	1	1	GD05122140	1.2KΩ
R151	1	1	GD05224140	220KΩ
R152	1	1	GD05153140	15KΩ
R153	1	1	GD05562140	5.6KΩ
R154	1	1	GD05471140	470Ω
R155	1	1	GD05331140	330Ω
R156	1	1	GD05103140	10KΩ
R157	1	1	GD05104140	100KΩ
R158	1	1	GD05563140	56KΩ
R159	1	1	GD05101140	100Ω
R160	1	1	GD05822140	8.2KΩ
R161	1	1	GD05101140	100Ω
R162	1	1	GF05220140	22Ω
R163	1	1	GD05102140	1KΩ
R164	1	1	GD05104140	100KΩ
R165	1	1	GD05561140	560Ω
R166	1	1	RA01030260	10KΩ
R167	1	1	GD05153140	15KΩ
R168	1	1	RA02020180	2KΩ
R170	1	1	GD05392140	3.9KΩ
R171	1	1	GD05392140	3.9KΩ
R172	1	1	GD05684140	680KΩ
R173	1	1	GD05684140	680KΩ
R174	1	1	GD05561140	560Ω
R175	1	1	GD05561140	560Ω
R176	1	1	GD05332140	3.3KΩ
R177	1	1	GD05332140	3.3KΩ
R178	1	1	GD05562140	5.6KΩ
R179	1	1	GD05562140	5.6KΩ
R180	1	1	GD05822140	8.2KΩ
R181	1	1	GD05822140	8.2KΩ
R182	1	1	GD05822140	8.2KΩ
R183	1	1	GD05822140	8.2KΩ
R184	1	1	GD05100140	10Ω
R185	1	1	GD05274140	270KΩ
R186	1	1	GD05683140	68KΩ
R187	1	1	GD05472140	4.7KΩ
R188	1	1	GD05152140	1.5KΩ
R189	1	1	GD05103140	10KΩ
R190	1	1	GD05154140	150KΩ

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	E	A		
R191	1	1	GD05273140	27KΩ
R192	1	1	GD05391140	390Ω
R193	1	1	GD05561140	560Ω
R194	1	1	GD05103140	10KΩ
R195	1	1	GF05221140	220Ω
R196	1	1	GD05472140	4.7KΩ
R197	1	1	GD05682140	6.8KΩ
R199	1	1	GD05332140	3.3KΩ
<b>P101-SEMICONDUCTORS</b>				
Q101	1	1	HT310471C0	Transistor 2SC1047(C)
Q102	1	1	HT310471C0	Transistor 2SC1047(C)
Q103	1	1	HT313591C0	Transistor 2SC1359(C)
Q104	1	1	HT308291C0	Transistor 2SC829(C)
Q105	1	1	HT308291C0	Transistor 2SC829(C)
Q106	1	1	HT308291C0	Transistor 2SC829(C)
Q107	1	1	HT308291C0	Transistor 2SC829(C)
Q108	1	1	HT308291C0	Transistor 2SC829(C)
Q109	1	1	HT402272A0	Transistor 2SD227(Q or V)
Q110	1	1	HC10015210	IC BA1320
Q111	1	1	HT308281B0	Transistor 2SC828(B)
Q112	1	1	HT308281B0	Transistor 2SC828(B)
Q113	1	1	HT308291B0	Transistor 2SC829(B)
Q114	1	1	HT308291C0	Transistor 2SC829(C)
Q115	1	1	HD20011050	Diode 1S1555
Q116	1	1	HD20011050	Diode 1S1555
Q117	1	1	HD20011050	Diode 1S1555
Q118	1	1	HD10003020	Diode 2OA90
Q119	1	1	HD10003020	Diode 2OA90
Q120	1	1	HD40009090	Varicap 1S2688B
Q121	1	1	HD10002020	Diode OA90
Q122	1	1	HD10002020	Diode OA90
Q123	1	1	HD10002020	Diode OA90
Q124	1	1	HD10002020	Diode OA90
Q125	1	1	HD10002020	Diode OA90
Q126	1	1	HD10002020	Diode OA90
Q127	1	1	HD10002020	Diode OA90
Q128	1	1	H110014020	L.E.D. LN217RP
Q129	1	1	HD10003020	Diode 2OA90
Q130	1	1	HD10003020	Diode 2OA90
Q131	1	1	HT308291C0	Transistor 2SC829(C)
Q133	1	1	HD10003020	Diode 2OA90
Q134	1	1	HD20011050	Diode 1S1555
<b>P101-MISCELLANEOUS</b>				
F101	1	1	FF39800010	L.C. Filter
F102	1	1	FF11070050	Ceramic Filter 10.7MHz
F103	1	1	FF11070050	Ceramic Filter 10.7MHz
F104	1	1	FF10045210	Ceramic Filter 450KHz
J101	1	1	YP10001130	Plug
J102	1	1	YP10001130	Plug
J103	1	1	YP10001090	Plug
J104	1	1	YP10001090	Plug
J105	1	1	YP06001040	Plug, (3P)

• (A): for Australia  
• (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	E	A		
J107	1	1	YP10001130	Plug
J109	1	7	YP10001130	Plug
J115	1	7	YP10001130	Plug
J141	1	10	YP10001130	Plug
J150	1	1	LA70258020	Antenna Coil
L101	1	1	LA70258010	Antenna Coil
L102	1	1	LI70038180	I.F.T. Coil
L103	1	1	LI70138010	I.F.T. Coil
L104	1	1	LI70018020	I.F.T. Coil
L105	1	1	LC16820020	Choke Coil 6.8μH
L106	1	1	LO71010020	OSC Coil
L107	1	1	LS10413010	M.P.X. Coil
L108	1	1	LS10413010	M.P.X. Coil
L109	1	1	LI70033070	I.F.T. Coil
L110	1	1	LI70033080	I.F.T. Coil
L111	1	1	LF11200630	Antenna Coil
L112	1	1	LC22260500	Choke Coil 22mH
<b>P101-CAPACITORS</b>				
C801	1	1	EA47505030	Elect 4.7μF 50V
C802	1	1	EA47505030	Elect 4.7μF 50V
C803	1	1	DD15471370	Ceramic 470pF ±5%
C804	1	1	DD15471370	Ceramic 470pF ±5%
C805	1	1	DD15221370	Ceramic 220pF ±5%
C806	1	1	DD15221370	Ceramic 220pF ±5%
C809	1	1	EA10602530	Elect 10μF 25V
C810	1	1	EA10602530	Elect 10μF 25V
C811	1	1	DD15101370	Ceramic 100pF ±5%
C812	1	1	DD15101370	Ceramic 100pF ±5%
C813	1	1	EA47505030	Elect 4.7μF 50V
C814	1	1	EA47505030	Elect 4.7μF 50V
C815	1	1	EA10701630	Elect 100μF 16V
C816	1	1	EA10701630	Elect 100μF 16V
C817	1	1	EA47505030	Elect 4.7μF 50V
C818	1	1	EA47505030	Elect 4.7μF 50V
C819	1	1	EA47505030	Elect 4.7μF 50V
C820	1	1	EA47505030	Elect 4.7μF 50V
C821	1	1	EA47701630	Elect 470μF 16V
C822	1	1	EA47701630	Elect 470μF 16V
C823	1	1	EA10701630	Elect 100μF 16V
C824	1	1	EA10701630	Elect 100μF 16V
C825	1	1	EA10505030	Elect 1μF 50V
C826	1	1	EA10505030	Elect 1μF 50V
<b>P101-RESISTORS</b> (All Resistors are ±5% and 1/4W)				
R801	1	1	GD05473140	47KΩ
R802	1	1	GD05473140	47KΩ
R803	1	1	GD05471140	470Ω
R804	1	1	GD05471140	470Ω
R805	1	1	GD05183140	18KΩ
R806	1	1	GD05183140	18KΩ
R807	1	1	GD05472140	4.7KΩ
R808	1	1	GD05472140	4.7KΩ
R809	1	1	GD05102140	1KΩ
R810	1	1	GD05102140	1KΩ

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	E	A		
R813	1	1	GD05472140	4.7KΩ
R814	1	1	GD05472140	4.7KΩ
R815	1	1	GD05393140	39KΩ
R816	1	1	GD05393140	39KΩ
R817	1	1	GD05102140	1KΩ
R818	1	1	GD05102140	1KΩ
R819	1	1	GD05470140	47Ω
R820	1	1	GD05470140	47Ω
R821	1	1	GD05681140	680Ω
R822	1	1	GD05681140	680Ω
R823	1	1	GD05223140	22KΩ
R824	1	1	GD05223140	22KΩ
R827	1	1	GD05223140	22KΩ
R828	1	1	GD05223140	22KΩ
R833	1	1	GD05333140	33KΩ
R834	1	1	GD05333140	33KΩ
R835	1	1	GD05102140	1KΩ
R836	1	1	GD05102140	1KΩ
<b>P101-SEMICONDUCTORS</b>				
Q801	1	1	HT318151B0	Transistor 2SC1815(Y)
Q802	1	1	HT318151B0	Transistor 2SC1815(Y)
Q803	1	1	HT318151C0	Transistor 2SC1815(GR)
Q804	1	1	HT318151C0	Transistor 2SC1815(GR)
Q805	1	1	HT318151B0	Transistor 2SC1815(Y)
Q806	1	1	HT318151B0	Transistor 2SC1815(Y)
Q807	1	1	HT110151B0	Transistor 2SA1015(Y)
Q808	1	1	HT110151B0	Transistor 2SA1015(Y)
<b>P200-POWER AMP. CIRCUIT BOARD</b>				
P200	2	2	YK42820210	P.W. Board, Power Amp.
	2	2	ZZ42820210	P.W. Board Assembly
<b>P200-CAPACITORS</b>				
C201	2	2	EA47505030	Elect 4.7μF 50V
C202	2	2	EA47701630	Elect 470μF 16V
C203	2	2	EA10701630	Elect 100μF 16V
C204	2	2	EA47601630	Elect 47μF 16V
C205	2	2	DD15510300	Ceramic 51pF ±5%
C206	2	2	EA10801630	Elect 1000μF 16V
C207	2	2	DF16105500	Film 1μF ±10%
C208	2	2	EA47701630	Elect 470μF 16V
C209	2	2	DD15201360	Ceramic 200pF ±5%
C210	2	2	DD15221360	Ceramic 220pF ±5%
C211	2	2	DK16102550	Ceramic 1000pF ±10%
C212	2	2	EA22602530	Elect 22μF 25V
C217	2	2	EQ22505020	Elect 2.2μF 50V
<b>P200-RESISTORS</b>				
R201	2	2	GF05100120	10Ω ±5% 1/4W
R202	2	2	GD05102140	1KΩ ±5% 1/4W
R203	2	2	GD05821140	820Ω ±5% 1/4W
R204	2	2	GD05102140	1KΩ ±5% 1/4W
<b>P200-SEMICONDUCTORS</b>				
Q201	2	2	HC10011020	IC AN7154
Q202	2	2	HI10004030	L.E.C. SCP132B
Q203	2	2	HD20011050	Diode 1S1555
<b>P200-MISCELLANEOUS</b>				
J201	16	16	YP10001130	Plug Connective Code
J208	2	2	YP01200070	Connective Cord

• (A): for Australia  
• (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	
	E	A			
P301	1	1	YK42821420	<b>P301-AUDIO CIRCUIT BOARD</b>	
	1	1	ZZ42821420	P.W. Board, Audio	
				P.W. Board Assembly	
C301	1	1	DD15471370	<b>P301-CAPACITORS</b>	
C302	1	1	DD15471370	Ceramic 470pF $\pm 5\%$	
C305	1	1	EA10701630	Ceramic 470pF $\pm 5\%$	
C306	1	1	EA10701630	Elect 100 $\mu$ F 16V	
C307	1	1	EE47505030	Elect 100 $\mu$ F 16V	
C308	1	1	EE47505030	Elect 4.7 $\mu$ F 50V	
C309	1	1	DK16102300	Elect 4.7 $\mu$ F 50V	
C310	1	1	DK16102300	Ceramic 1000pF $\pm 10\%$	
C311	1	1	EA10701630	Ceramic 1000pF $\pm 10\%$	
C312	1	1	EA10701630	Elect 100 $\mu$ F 16V	
C313	1	1	DD15470370	Elect 100 $\mu$ F 16V	
C314	1	1	DD15470370	Ceramic 47pF $\pm 5\%$	
C315	1	1	EA10701630	Ceramic 47pF $\pm 5\%$	
C316	1	1	EA10701630	Elect 100 $\mu$ F 16V	
C317	1	1	EA10701630	Elect 100 $\mu$ F 16V	
C319	1	1	EA10505030	Elect 100 $\mu$ F 16V	
C320	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C321	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C322	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C323	1	1	EA22702530	Elect 220 $\mu$ F 25V	
C324	1	1	EA22702530	Elect 220 $\mu$ F 25V	
C325	1	1	DF55101090	Film 100pF $\pm 5\%$	
C326	1	1	DF55101090	Film 100pF $\pm 5\%$	
C327	1	1	DF15392300	Film 3900pF $\pm 5\%$	
C328	1	1	DF15392300	Film 3900pF $\pm 5\%$	
C329	1	1	DF15222300	Film 2200pF $\pm 5\%$	
C330	1	1	DF15222300	Film 2200pF $\pm 5\%$	
C331	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C332	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C333	1	1	DF15472300	Film 4700pF $\pm 5\%$	
C334	1	1	DF15472300	Film 4700pF $\pm 5\%$	
C335	1	1	DF16273300	Film 0.027 $\mu$ F $\pm 10\%$	
C336	1	1	DF16273300	Film 0.027 $\mu$ F $\pm 10\%$	
C337	1	1	EA10602530	Elect 10 $\mu$ F 25V	
C338	1	1	EA10602530	Elect 10 $\mu$ F 25V	
C339	1	1	DF16562300	Film 5600pF $\pm 10\%$	
C340	1	1	DF16562300	Film 5600pF $\pm 10\%$	
C341	1	1	DF16473300	Film 0.047 $\mu$ F $\pm 10\%$	
C342	1	1	DF16473300	Film 0.047 $\mu$ F $\pm 10\%$	
C343	1	1	DF16102300	Film 1000pF $\pm 10\%$	
C344	1	1	DF16102300	Film 1000pF $\pm 10\%$	
C345	1	1	EE10405030	Elect 0.1 $\mu$ F 50V	
C346	1	1	EE10405030	Elect 0.1 $\mu$ F 50V	
C347	1	1	EE33405030	Elect 0.33 $\mu$ F 50V	
C348	1	1	EE33405030	Elect 0.33 $\mu$ F 50V	
C349	1	1	EA10602530	Elect 10 $\mu$ F 25V	
C350	1	1	EA10602530	Elect 10 $\mu$ F 25V	
C351	1	1	EA22701630	Elect 220 $\mu$ F 16V	
C352	1	1	EA22701630	Elect 220 $\mu$ F 16V	
C353	1	1	EA10602530	Elect 10 $\mu$ F 25V	
C354	1	1	EA10602530	Elect 10 $\mu$ F 25V	
C355	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C356	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C357	1	1	EA22505030	Elect 2.2 $\mu$ F 50V	
C358	1	1	EA22505030	Elect 2.2 $\mu$ F 50V	
C359	1	1	DD15101370	Ceramic 100pF $\pm 5\%$	
C360	1	1	DD15101370	Ceramic 100pF $\pm 5\%$	

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	
	E	A			
C361	1	1	EA47505030	Elect 4.5 $\mu$ F 50V	
C362	1	1	EA47505030	Elect 4.5 $\mu$ F 50V	
C363	1	1	EA22505030	Elect 2.2 $\mu$ F 50V	
C364	1	1	EA22505030	Elect 2.2 $\mu$ F 50V	
C366	1	1	EA10701630	Elect 100 $\mu$ F 16V	
C367	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C368	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C369	1	1	EA10702530	Elect 100 $\mu$ F 25V	
C370	1	1	EA22505090	Elect 2.2 $\mu$ F 50V	
C371	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C372	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C374	1	1	EA33601630	Elect 33 $\mu$ F 16V	
C375	1	1	EA47702530	Elect 470 $\mu$ F 25V	
C376	1	1	EV10502560	Elect 1 $\mu$ F 25V	
C379	1	1	DK16821300	Ceramic 680pF $\pm 10\%$	
C380	1	1	DK16821300	Ceramic 680pF $\pm 10\%$	
C381	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C382	1	1	EA10505030	Elect 1 $\mu$ F 50V	
C383	1	1	DF16153300	Film 0.015 $\mu$ F $\pm 10\%$	
C384	1	1	DF16153300	Film 0.015 $\mu$ F $\pm 10\%$	
C385	1	1	DK16102300	Ceramic 1000pF $\pm 10\%$	
C386	1	1	DK16102300	Ceramic 1000pF $\pm 10\%$	
C401	1	1	DF16223300	Film 0.022 $\mu$ F $\pm 10\%$	
C402	1	1	DF16223300	Film 0.022 $\mu$ F $\pm 10\%$	
C403	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C404	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C405	1	1	EE33405050	Elect 0.33 $\mu$ F 50V	
C406	1	1	EE33405050	Elect 0.33 $\mu$ F 50V	
C407	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C408	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C409	1	1	DF16152300	Film 1500pF $\pm 10\%$	
C410	1	1	DF16152300	Film 1500pF $\pm 10\%$	
C411	1	1	DF16223300	Film 0.022 $\mu$ F $\pm 10\%$	
C412	1	1	DF16183300	Film 0.018 $\mu$ F $\pm 10\%$	
C413	1	1	DF16223300	Film 0.022 $\mu$ F $\pm 10\%$	
C414	1	1	DF16223300	Film 0.022 $\mu$ F $\pm 10\%$	
C415	1	1	DF55101090	Film 100pF $\pm 5\%$	
C416	1	1	DF55101090	Film 100pF $\pm 5\%$	
C417	1	1	DF16183300	Film 0.018 $\mu$ F $\pm 10\%$	
C418	1	1	DF16223300	Film 0.022 $\mu$ F $\pm 10\%$	
C419	1	1	DF16223300	Film 0.0022 $\mu$ F $\pm 10\%$	
C420	1	1	DF16223300	Film 0.0022 $\mu$ F $\pm 10\%$	
C421	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C422	1	1	EA47505030	Elect 4.7 $\mu$ F 50V	
C601	1	1	DF16682300	Film 6800pF $\pm 10\%$	
C602	1	1	DF16682300	Film 6800pF $\pm 10\%$	
C603	1	1	DF16683300	Film 0.068 $\mu$ F $\pm 10\%$	
C604	1	1	DF16683300	Film 0.068 $\mu$ F $\pm 10\%$	
C605	1	1	DF16333300	Film 0.033 $\mu$ F $\pm 10\%$	
C606	1	1	DF16333300	Film 0.033 $\mu$ F $\pm 10\%$	
C607	1	1	EE33405030	Elect 0.33 $\mu$ F 50V	
C608	1	1	EE33405030	Elect 0.33 $\mu$ F 50V	
C609	1	1	DF16472300	Film 4700pF $\pm 10\%$	
C610	1	1	DF16472300	Film 4700pF $\pm 10\%$	
C611	1	1	EE10405030	Elect 0.1 $\mu$ F 50V	
C612	1	1	EE10405030	Elect 0.1 $\mu$ F 50V	
C613	1	1	DK16221300	Ceramic 220pF $\pm 10\%$	

- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	E	A		
<b>P301-RESISTORS (All Resistors are <math>\pm 5\%</math> and <math>\frac{1}{4}W</math>)</b>				
R301	1	1	GD05100140	10 $\Omega$
R302	1	1	GD05100140	10 $\Omega$
R303	1	1	GD05182140	1.8K $\Omega$
R304	1	1	GD05182140	1.8K $\Omega$
R305	1	1	GD05154140	150K $\Omega$
R306	1	1	GD05154140	150K $\Omega$
R307	1	1	GD05223140	22K $\Omega$
R308	1	1	GD05223140	22K $\Omega$
R309	1	1	GD05103140	10K $\Omega$
R310	1	1	GD05103140	10K $\Omega$
R311	1	1	GD05473140	47K $\Omega$
R312	1	1	GD05473140	47K $\Omega$
R313	1	1	GD05333140	33K $\Omega$
R314	1	1	GD05333140	33K $\Omega$
R315	1	1	GD05562140	5.6K $\Omega$
R316	1	1	GD05562140	5.6K $\Omega$
R317	1	1	GD05102140	1K $\Omega$
R318	1	1	GD05102140	1K $\Omega$
R319	1	1	GD05101140	100 $\Omega$
R320	1	1	GD05101140	100 $\Omega$
R321	1	1	GD05152140	1.5K $\Omega$
R322	1	1	GD05152140	1.5K $\Omega$
R323	1	1	GD05822140	8.2K $\Omega$
R324	1	1	GD05822140	8.2K $\Omega$
R325	1	1	GD05564140	560K $\Omega$
R326	1	1	GD05564140	560K $\Omega$
R327	1	1	GD05104140	100K $\Omega$
R328	1	1	GD05104140	100K $\Omega$
R329	1	1	GD05562140	5.6K $\Omega$
R330	1	1	GD05562140	5.6K $\Omega$
R331	1	1	GD05821140	820 $\Omega$
R332	1	1	GD05821140	820 $\Omega$
R333	1	1	GD05100140	10 $\Omega$
R334	1	1	GD05100140	10 $\Omega$
R335	1	1	GD05332140	3.3K $\Omega$
R336	1	1	GD05332140	3.3K $\Omega$
R337	1	1	GD05473140	47K $\Omega$
R338	1	1	GD05473140	47K $\Omega$
R339	1	1	GD05472140	4.7K $\Omega$
R340	1	1	GD05472140	4.7K $\Omega$
R341	1	1	GD05274140	270K $\Omega$
R342	1	1	GD05274140	270K $\Omega$
R343	1	1	GD05564140	560K $\Omega$
R344	1	1	GD05564140	560K $\Omega$
R345	1	1	GD05274140	270K $\Omega$
R346	1	1	GD05274140	270K $\Omega$
R347	1	1	GD05181140	180 $\Omega$
R348	1	1	GD05181140	180 $\Omega$
R349	1	1	GD05103140	10K $\Omega$
R350	1	1	GD05103140	10K $\Omega$
R351	1	1	GD05221140	220 $\Omega$
R352	1	1	GD05221140	220 $\Omega$
R353	1	1	GD05683140	68K $\Omega$

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	E	A		
<b>P301-RESISTORS</b>				
R354	1	1	GD05561140	560 $\Omega$
R335	1	1	GD05182140	1.8K $\Omega$
R357	1	1	GD05181140	180 $\Omega$
R358	1	1	GD05181140	180 $\Omega$
R359	1	1	GD05101140	100 $\Omega$
R360	1	1	GD05101140	100 $\Omega$
R361	1	1	GD05152140	1.5K $\Omega$
R362	1	1	GD05152140	1.5K $\Omega$
R363	1	1	GD05564140	560K $\Omega$
R364	1	1	GD05564140	560K $\Omega$
R365	1	1	GD05821140	820 $\Omega$
R366	1	1	GD05821140	820 $\Omega$
R367	1	1	RA01020110	1K $\Omega$ (B) Trimming
R368	1	1	RA01020110	1K $\Omega$ (B) Trimming
R369	1	1	RA02030060	20K $\Omega$ (B) Trimming
R370	1	1	RA02030060	20K $\Omega$ (B) Trimming
R371	1	1	RC00000140	0 $\Omega$
R372	1	1	GD05473140	47K $\Omega$
R373	1	1	GD05472140	4.7K $\Omega$
R374	1	1	GD05472140	4.7K $\Omega$
R375	1	1	RA05020160	5K $\Omega$ (B) Trimming
R376	1	1	GD05391140	390 $\Omega$
R377	1	1	GD05105140	1M $\Omega$
R378	1	1	GD05822140	8.2K $\Omega$
R380	1	1	GD05154140	150K $\Omega$
R382	1	1	GD05102140	1K $\Omega$
R385	1	1	GD05103140	10K $\Omega$
R386	1	1	GD05103140	10K $\Omega$
R389	1	1	GD05272140	2.7K $\Omega$
R390	1	1	GD05272140	2.7K $\Omega$
R397	1	1	GD05182140	1.8K $\Omega$
R398	1	1	GD05182140	1.8K $\Omega$
R399	1	1	GD05105140	1M $\Omega$
R401	1	1	GD05184140	180K $\Omega$
R402	1	1	GD05184140	180K $\Omega$
R403	1	1	GD05332140	3.3K $\Omega$
R404	1	1	GD05332140	3.3K $\Omega$
R405	1	1	RA05020160	5K $\Omega$ (B) Trimming
R406	1	1	RA05020160	5K $\Omega$ (B) Trimming
R407	1	1	GD05332140	3.3K $\Omega$
R408	1	1	GD05332140	3.3K $\Omega$
R411	1	1	GD05222140	2.2K $\Omega$
R412	1	1	GD05222140	2.2K $\Omega$
R415	1	1	RA02030060	20K $\Omega$ (B) Trimming
R416	1	1	RA02030060	20K $\Omega$ (B) Trimming
R417	1	1	GD05103140	10K $\Omega$
R418	1	1	GD05103140	10K $\Omega$
R419	1	1	GD05472140	4.7K $\Omega$
R420	1	1	GD05472140	4.7K $\Omega$
R421	1	1	GD05472140	4.7K $\Omega$
R422	1	1	GD05472140	4.7K $\Omega$
R423	1	1	GD05473140	47K $\Omega$
R424	1	1	GD05473140	47K $\Omega$
R425	1	1	GD05334140	330K $\Omega$

• (A): for Australia  
• (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E				A	E		
R426	1	1	GD05334140	330KΩ	Q351	1	1	HD10002020	Diode OA90
R427	1	1	GD05682140	6.8KΩ	Q352	1	1	HD10002020	Diode OA90
R428	1	1	GD05682140	6.8KΩ	Q353	1	1	HD10002020	Diode OA90
R429	1	1	GD05102140	1KΩ	Q354	1	1	HD10002020	Diode OA90
R430	1	1	GD05102140	1KΩ	Q355	1	1	HD10001010	Diode 1N34A
R431	1	1	GD05103140	10KΩ	Q356	1	1	HD10001010	Diode 1N34A
R432	1	1	GD05103140	10KΩ	Q357	1	1	HD20011050	Diode 1S1555
R433	1	1	GD05470140	47Ω	Q358	1	1	HD20011050	Diode 1S1555
R434	1	1	GD05680140	68Ω	Q361	1	1	HD30029090	Zener WZ-090
R435	1	1	GD05680140	68Ω	Q363	1	1	HD20011050	Diode 1S1555
R436	1	1	GD05470140	47Ω	Q364	1	1	HD20011050	Diode 1S1555
R437	1	1	GF05390140	39Ω	Q365	1	1	HD20011050	Diode 1S1555
R439	1	1	GD05472140	4.7KΩ	Q366	1	1	HD20011050	Diode 1S1555
R440	1	1	GD05472140	4.7KΩ	Q367	1	1	HD20011050	Diode 1S1555
R441	1	1	GD05272140	2.7KΩ	Q401	1	1	HT308281C0	Transistor 2SC828(R)
R442	1	1	GD05272140	2.7KΩ	Q402	1	1	HT308281C0	Transistor 2SC828(R)
R449	1	1	GF05047120	4.7Ω	Q403	1	1	HT318151C0	Transistor 2SC1815(GR)
R603	1	1	GD05103140	10KΩ	Q404	1	1	HT318151C0	Transistor 2SC1815(GR)
R604	1	1	GD05103140	10KΩ	Q405	1	1	HT308281C0	Transistor 2SC828(R)
R605	1	1	RM05030810	50KΩ(D) Variable	Q406	1	1	HT308281C0	Transistor 2SC828(R)
R606	1	1	RM05030810	50KΩ(D) Variable					<b>P301-MISCELLANEOUS</b>
R609	1	1	GD05472140	4.7KΩ	J390	1	1	YP10001130	Plug, (105)
R610	1	1	GD05472140	4.7KΩ	J490	1	1	YP10001130	Plug, (7)
R611	1	1	GD05102140	1KΩ	J601	1	1	YP10001130	Plug, (7)
R612	1	1	GD05102140	1KΩ					
R613	1	1	RK05030290	50KΩ(G) Variable	L301	1	1	LC22260060	Choke Coil 22mH
R614	1	1	RM05030820	50KΩ(B) Variable	L302	1	1	LC22260060	Choke Coil 22mH
R615	1	1	GD05332140	3.3KΩ	L303	1	1	LS70305010	M.P.X. Coil
R616	1	1	GD05332140	3.3KΩ	L304	1	1	LS70305010	M.P.X. Coil
R619	1	1	GD05332140	3.3KΩ	L401	1	1	LC22260060	Choke Coil 22mH
R620	1	1	GD05332140	3.3KΩ	L402	1	1	LC22260060	Choke Coil 22mH
R621	1	1	GD05103140	10KΩ	L403	1	1	LC24750040	Choke Coil 4.7mH
R622	1	1	GD05103140	10KΩ	L404	1	1	LC24750040	Choke Coil 4.7mH
				<b>P301-SEMICONDUCTORS</b>	S310	1	1	SS09020140	Slide Switch
Q301	1	1	HT110151B0	Transistor 2SA1015(Y)	S311	1	1	SB22950010	Switch Band FLX
Q302	1	1	HT110151B0	Transistor 2SA1015(Y)	S410	1	1	SS06030180	Slide Switch
Q303	1	1	HT318151D0	Transistor 2SC1815(GR)	S411	1	1	SB12500010	Switch Band FLX
Q304	1	1	HT318151D0	Transistor 2SC1815(GR)	S412	1	1	SC00030020	Switch
Q305	1	1	HT322401A0	Transistor 2SC2240	S601	1	1	SC02020350	Switch, Mode
Q306	1	1	HT322401A0	Transistor 2SC2240	S602	1	1	SC02020350	Switch, Loudness
Q307	1	1	HC10001360	IC LM1011AN	S603	1	1	SC02020270	Switch, ISS
Q308	1	1	HC10001360	IC LM1011AN	S604	1	1	SR06050190	Rotary Switch, Function
Q309	1	1	HT308281B0	Transistor 2SC828(B)					<b>P500-MIC AMP. CIRCUIT BOARD</b>
Q310	1	1	HT308281B0	Transistor 2SC828(B)	P500	1	1	YF42820030	P.W. Board, Mic Amp.
						1	1	ZZ42820030	P.W. Board Assembly
Q311	1	1	HT308281B0	Transistor 2SC828(B)					<b>P500-CAPACITORS</b>
Q312	1	1	HT308281B0	Transistor 2SC828(B)	C501	1	1	EA10701630	Elect 100μF 16V
Q313	1	1	HT402272A0	Transistor 2SD227(Q or V)	C502	1	1	EA10505030	Elect 1μF 50V
Q314	1	1	HT402272A0	Transistor 2SD227(Q or V)	C503	1	1	EA33601630	Elect 33μF 16V
Q317	1	1	HT308281B0	Transistor 2SC828(Q)	C505	1	1	DD15470370	Ceramic 47pF ±5%
Q318	1	1	HD20011050	Diode 1S1555	C506	1	1	EA10505030	Elect 1μF 50V
Q331	1	1	HT308281C0	Transistor 2SC828(C)	C507	1	1	EA10405030	Elect 0.1μF 50V
Q332	1	1	HT402272A0	Transistor 2SD227(Q or V)	C508	1	1	EA10405030	Elect 0.1μF 50V
Q333	1	1	HT308281B0	Transistor 2SC828(Q)	C509	1	1	EA33601630	Elect 33μF 16V
Q334	1	1	HT308281B0	Transistor 2SC828(Q)	C510	1	1	DK16222300	Ceramic 220pF ±10%
					C511	1	1	DD15221370	Ceramic 220pF ±5%
					C513	1	1	DF16104300	Film 0.1μF ±10%
					C514	1	1	DF16104300	Film 0.1μF ±10%

- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
<b>P500-RESISTORS</b> (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$ )				
R501	1	1	GD05332140	3.3K $\Omega$
R502	1	1	GD05473140	47K $\Omega$
R503	1	1	GD05561140	560 $\Omega$
R504	1	1	GD05154140	150K $\Omega$
R505	1	1	GD05561140	560 $\Omega$
R506	1	1	GD05332140	3.3K $\Omega$
R507	1	1	GD05561140	560 $\Omega$
R508	1	1	GD05562140	5.6K $\Omega$
R509	1	1	GD05333140	33K $\Omega$
R510	1	1	GD05333140	33K $\Omega$
R515	1	1	GD05823140	82K $\Omega$
R517	1	1	GD05561140	560 $\Omega$
R518	1	1	GD05561140	560 $\Omega$
R519	1	1	GD05103140	10K $\Omega$
R520	1	1	RD02030090	20K $\Omega$ (A) Variable
R521	1	1	RK05030300	50K $\Omega$ (A) Variable
R523	1	1	GD05222140	2.2K $\Omega$
R524	1	1	GD05331140	330 $\Omega$
<b>P500-TRANSISTORS</b>				
Q501	1	1	HT318151B0	Transistor 2SC1815(Y)
Q502	1	1	HT318151C0	Transistor 2SC1815(GR)
<b>P500-MISCELLANEOUS</b>				
J590	1	1	YP10001130	Plug, (23)
S501	1	1	SC06020012	Switch, Mixing
S502	1	1	SC04020120	Switch, Rec Mode
<b>P700-PHONO AMP.</b>				
<b>CIRCUIT BOARD</b>				
P700	1	1	YF42820010	P.W. Board, Phone Amp.
	1	1	ZZ42820010	P.W. Board Assembly
<b>P700-CAPACITORS</b>				
C701	1	1	EE10505010	Elect 1 $\mu$ F 50V
C702	1	1	EE10505010	Elect 1 $\mu$ F 50V
C703	1	1	EA33601630	Elect 33 $\mu$ F 16V
C704	1	1	EA33601630	Elect 33 $\mu$ F 16V
C705	1	1	EA47601630	Elect 47 $\mu$ F 16V
C706	1	1	EA47601630	Elect 47 $\mu$ F 16V
C707	1	1	EA10701630	Elect 100 $\mu$ F 16V
C708	1	1	EA10701630	Elect 100 $\mu$ F 16V
C709	1	1	EA47505030	Elect 4.7 $\mu$ F 50V
C710	1	1	EA47505030	Elect 4.7 $\mu$ F 50V
C711	1	1	DF16124300	Film 0.12 $\mu$ F $\pm 10\%$
C712	1	1	DF16124300	Film 0.12 $\mu$ F $\pm 10\%$
C713	1	1	DF16682300	Film 6800pF $\pm 10\%$
C714	1	1	DF16682300	Film 6800pF $\pm 10\%$
C715	1	1	EA33701630	Elect 330 $\mu$ F 16V
C723	1	1	EA47505030	Elect 4.7 $\mu$ F 50V
C724	1	1	EA47505030	Elect 4.7 $\mu$ F 50V
C725	1	1	DK16102300	Ceramic 1000pF $\pm 10\%$

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
<b>P700-RESISTORS</b> (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$ )				
R701	1	1	GD05153140	15K $\Omega$
R702	1	1	GD05153140	15K $\Omega$
R703	1	1	GD05221140	220 $\Omega$
R704	1	1	GD05221140	220 $\Omega$
R705	1	1	GD05103140	10K $\Omega$
R706	1	1	GD05103140	10K $\Omega$
R707	1	1	GD05154140	150K $\Omega$
R708	1	1	GD05154140	150K $\Omega$
R709	1	1	GD05223140	22K $\Omega$
R710	1	1	GD05223140	22K $\Omega$
R711	1	1	GD05333140	33K $\Omega$
R712	1	1	GD05333140	33K $\Omega$
R713	1	1	GD05103140	10K $\Omega$
R714	1	1	GD05103140	10K $\Omega$
R715	1	1	GD05101140	100 $\Omega$
R716	1	1	GD05101140	100 $\Omega$
R717	1	1	GD05222140	2.2K $\Omega$
R718	1	1	GD05222140	2.2K $\Omega$
R719	1	1	GD05223140	22K $\Omega$
R720	1	1	GD05223140	22K $\Omega$
R721	1	1	GD05473140	47K $\Omega$
R722	1	1	GD05473140	47K $\Omega$
R723	1	1	GD05102140	1K $\Omega$
R724	1	1	GD05102140	1K $\Omega$
R725	1	1	GD05122140	1.2K $\Omega$
R733	1	1	GD05683140	68K $\Omega$
R734	1	1	GD05683140	68K $\Omega$
R735	1	1	GD05473140	47K $\Omega$
R736	1	1	GD05473140	47K $\Omega$
R739	1	1	GD05333140	33K $\Omega$
R740	1	1	GD05333140	33K $\Omega$
R743	1	1	GD05473140	47K $\Omega$
R744	1	1	GD05473140	47K $\Omega$
R745	1	1	GD05104140	100K $\Omega$
R746	1	1	GD05104140	100K $\Omega$
R747	1	1	GD05272140	2.7K $\Omega$
R748	1	1	GD05272140	2.7K $\Omega$
<b>P700-SEMICONDUCTORS</b>				
Q701	1	1	HT110151B0	Transistor 2SA1015(Y)
Q702	1	1	HT110151B0	Transistor 2SA1015(Y)
Q703	1	1	HT318151C0	Transistor 2SC1815(GR)
Q704	1	1	HT318151C0	Transistor 2SC1815(GR)
<b>P700-MISCELLANEOUS</b>				
J701	1	1	YPO6001070	Plug, (9P)
J702	1	1	YJ06001430	Jack, (9P)
J710	1	1	YPO6001040	Plug, (3P)

• (A): for Australia  
• (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION	REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E				A	E		
P850	1	1	YK42822320	P850-HEADPHONE JACK CIRCUIT BOARD	R901	1	1	GG05100120	P901-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$ )
	1	1	ZZ42822320	P.W. Board, Headphone Jack P.W. Board Assembly	R902	1	1	GG05100120	10 $\Omega$ $\frac{1}{4}W$
R851	1	1	GD05103140	P850-RESISTORS	R903	1	1	GD05102140	10 $\Omega$ $\frac{1}{4}W$
R852	1	1	GD05103140	10K $\Omega$ $\pm 5\%$ $\frac{1}{4}W$	R911	1	1	RA05030090	1K $\Omega$
R853	1	1	GD05103140	10K $\Omega$ $\pm 5\%$ $\frac{1}{4}W$	R912	1	1	RA05030090	50K $\Omega$ (B) Trimming
R854	1	1	GD05103140	10K $\Omega$ $\pm 5\%$ $\frac{1}{4}W$	R913	1	1	GD05272140	50K $\Omega$ (B) Trimming
Q851	1	1	HT308281C0	P850-SEMICONDUCTORS	R914	1	1	GG05022120	2.7K $\Omega$
Q852	1	1	HT308281C0	Transistor 2SC828R	R923	1	1	GD05102140	2.2 $\Omega$ $\frac{1}{4}W$
J003	1	1	YJ01001210	P850-JACK	R924	1	1	GG05100120	1K $\Omega$
				Headphone Jack	R931	1	1	GG05100120	10 $\Omega$ $\frac{1}{4}W$
P901	1	1	YK42822310	P901-D.C.-D.C. UNIT CIRCUIT BOARD	R932	1	1	GG05100120	10 $\Omega$ $\frac{1}{4}W$
	1	1	ZZ42828310	P.W. Board, D.C.-D.C. Unit	R933	1	1	GD05151140	150 $\Omega$
				P.W. Board Assembly	R934	1	1	GD05104140	100K $\Omega$
C901	1	1	EA10702530	P901-CAPACITORS	R941	1	1	GA05820010	82 $\Omega$ 1W
C902	1	1	EA10702530	Elect 100 $\mu F$ 25V	R942	1	1	GA05820010	82 $\Omega$ 1W
C903	1	1	EA47602530	Elect 100 $\mu F$ 25V	R943	1	1	GD05101140	100 $\Omega$
C912	1	1	DK16331550	Ceramic 330pF $\pm 10\%$					
C913	1	1	DK16331550	Ceramic 330pF $\pm 10\%$					
C914	1	1	DK18403320	Ceramic 0.04 $\mu F$ $\pm 80\%$ $-20\%$					
C915	1	1	DF16153300	Film 0.015 $\mu F$ $\pm 10\%$					
C916	1	1	DF16682300	Film 0.0068 $\mu F$ $\pm 10\%$					
C917	1	1	EZ10701010	Elect 100 $\mu F$ 10V					
C918	1	1	DF16682300	Film 0.0068 $\mu F$ $\pm 10\%$					
C919	1	1	DF75122510	Film 0.0012 $\mu F$ $\pm 5\%$					
C920	1	1	DF16152350	Film 1500pF $\pm 10\%$					
C921	1	1	DK18403320	Ceramic 0.04 $\mu F$ $\pm 80\%$ $-20\%$					
C923	1	1	EA10701630	Elect 100 $\mu F$ 16V					
C925	1	1	DF16152350	Film 1500pF $\pm 10\%$					
C932	1	1	EA47701630	Elect 470 $\mu F$ 16V					
C933	1	1	EA47701630	Elect 470 $\mu F$ 16V					
C934	1	1	EA47701630	Elect 470 $\mu F$ 16V					
					P902	1	1	YK42822330	P902-D.C.-D.C. UNIT CIRCUIT BOARD
						1	1	ZZ42822330	P.W. Board, D.C.-D.C. Unit
									P.W. Board Assembly
					C904	1	1	EA22602530	P902-CAPACITORS
					C905	1	1	DF16153300	Elect 22 $\mu F$ 25V
					C907	1	1	EA10602530	Film 0.015 $\mu F$ $\pm 10\%$
					C908	1	1	EA22602530	Elect 10 $\mu F$ 25V
					C922	1	1	DK18403320	22 $\mu F$ 25V
					C926	1	1	DK17103300	Ceramic 0.04 $\mu F$ $\pm 80\%$ $-20\%$
					C927	1	1	DK18104010	Ceramic 0.01 $\mu F$ $\pm 20\%$
					C931	1	1	EA10702530	Ceramic 0.1 $\mu F$ $\pm 100\%$ $-0$
									Elect 100 $\mu F$ 25V
					R904	1	1	GD05152140	P902-RESISTORS
					R905	1	1	GD05150140	1.5K $\Omega$ $\pm 5\%$ $\frac{1}{4}W$
					R906	1	1	GD05473140	15 $\Omega$ $\pm 5\%$ $\frac{1}{4}W$
									47K $\Omega$ $\pm 5\%$ $\frac{1}{4}W$

- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
				<b>P902-SEMICONDUCTORS</b>
Q902	1	1	HT308282A0	Transistor 2SC828(R or S)
Q903	1	1	HT407931Q0	Transistor 2SD793(Q)
Q930	1	1	HD30059090	Zener WZ-182
Q931	1	1	HD20003210	Diode 1S2471F
				<b>P902-MISCELLANEOUS</b>
L901	1	1	TC12030010	OSC Transformer
L903	1	1	LC14730040	Choke Coil 47μH
L905	1	1	LC13320050	Choke Coil 3.3μH
L906	1	1	LC14730040	Choke Coil 47μH
				<b>P951-POWER SUPPLY CIRCUIT BOARD</b>
▲P950	1	1	YK42821430	P.W. Board, Power Supply
	1	1	ZZ42821430	P.W. Board Assembly
				<b>P951-CAPACITORS</b>
C935	1	1	EA47801630	Elect 4700μF 16V
C936	1	1	EA47801630	Elect 4700μF 16V
C937	1	1	EA47601630	Elect 47μF 16V
C951	1	1	DK18103320	Ceramic 0.01μF +80% -20%
C952	1	1	DK18103320	Ceramic 0.01μF +80% -20%
C953	1	1	DK18103320	Ceramic 0.01μF +80% -20%
C954	1	1	DK18103320	Ceramic 0.01μF +80% -20%
C955	1	1	EA47701630	Elect 470μF 16V
				<b>P951-RESISTORS</b>
R951	1	1	GD05102140	1KΩ ±5% 1/4W
R953	1	1	RA05030090	50KΩ(B) Trimming
R954	1	1	GD05683140	68KΩ ±5% 1/4W
R955	1	1	GD05104140	100KΩ ±5% 1/4W
R956	1	1	GD05332140	3.3KΩ ±5% 1/4W
				<b>P951-SEMICONDUCTORS</b>
Q951	1	1	HD20007290	Diode S3V10
Q952	1	1	HD20007290	Diode S3V10
Q953	1	1	HD20007290	Diode S3V10
Q954	1	1	HD20007290	Diode S3V10
Q955	1	1	HT402272A0	Transistor 2SD227(Q or V)
				<b>P951-MISCELLANEOUS</b>
F901	1	1	FS10250800	Fuse, 2.5A Semco
J901	1	1	YJ08000200	Jack, Fuse Clip
J902	1	1	YJ08000200	Jack, Fuse Clip
J950	1	1	YP06001040	Plug, (3P)
J951	1	1	YP06001070	Plug, (9P)
J952	1	1	YP10001130	Plug, (24)

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	A	E		
P990	1	1	YK42821440	<b>P990-MOTOR FILTER CIRCUIT BOARD</b>
	1	1	ZZ42821440	P.W. Board, Motor Filter
				P.W. Board Assembly
				<b>P990-CAPACITORS</b>
C991	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C992	1	1	EA47701630	Elect 470μF 16V
				<b>P990-RESISTOR</b>
R991	1	1	GG05010120	1Ω ±5% 1/4W
				<b>P990-MISCELLANEOUS</b>
J991	1	1	YP10001130	Plug, (4)
L991	1	1	LC14730040	Choke Coil, 47μH

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

## 12. TECHNICAL SPECIFICATIONS

### Tape Recorder Section

Style	Front load
Tape Drive System	Single Capstan Drive
Cartridge	Philips type compact cassette
Track System	Compatible Stereo 4-track 2 channel
Tape Speed	1-7/8 ips (4.75 cm/sec.)
Heads	2 Head System
Composition	Rec/Play: Superhard Permalloy Erase: Ferrite
Motor	DC Servo Controlled Motor x 1
Meters	x 2
Recording System	AC Bias
Erasing System	AC Erase
Overall Frequency Response (Dolby off):	
Ferric Oxide Tape	40 Hz to 13 kHz -5 dB
CrO <sub>2</sub> Tape	40 Hz to 14 kHz -5 dB
Total Harmonic Distortion	
Ferric Oxide Tape	2%
CrO <sub>2</sub> Tape	2.5%
FeCr Tape	2.5%
Wow and Flutter (DIN WTD)	0.16%
Fast Rewind time	110 sec.
Fast Forward time	110 sec.

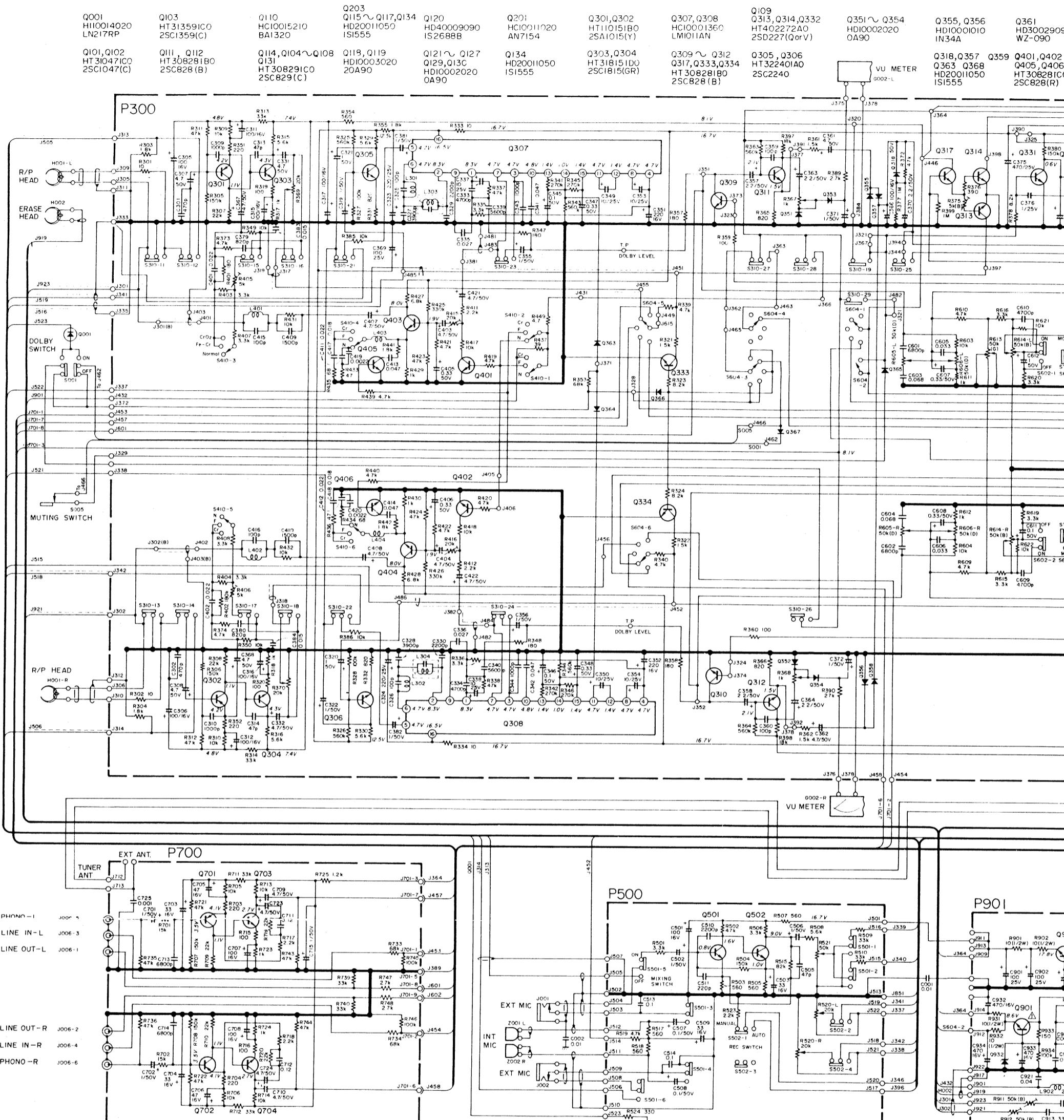
### Tuner Section

Circuit System	2 Band MW/FM Superheterodyne
Frequency Range	FM 88 ~ 108 MHz MW 525 ~ 1605 kHz

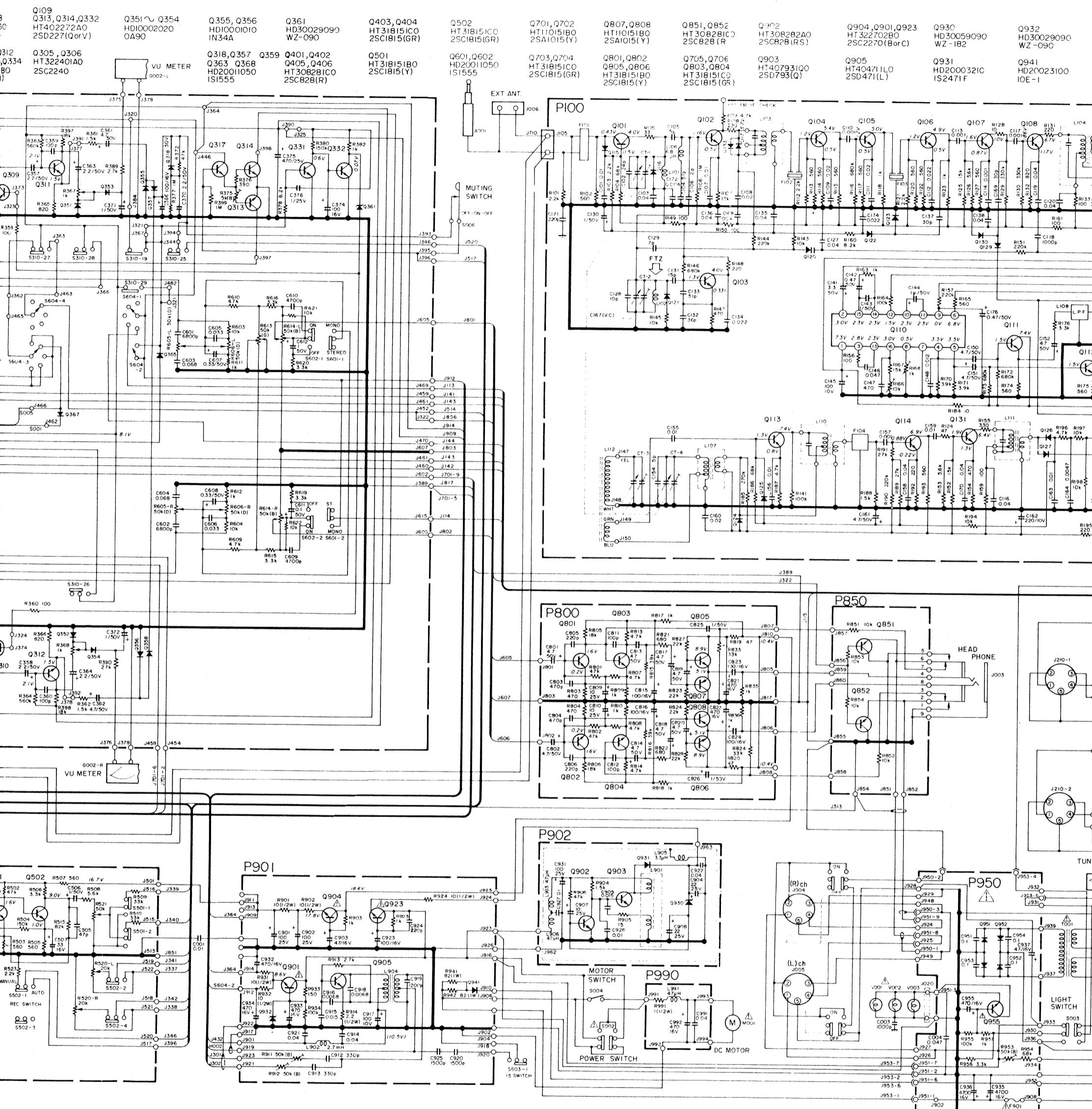
### General

Semiconductor Complement	
FET	2
Transistors	60
Diodes	42
ICs	3
LEDs	4
Power Output	4.5W (1 kHz 10% Dist)
Power Requirement	AC 8 "D" Size Batteries External DC 12V 220V AC, 50 Hz
AC Line Voltage	(E/N versions are featuring an external voltage selector for use on 110/220V. T versions 220/240V AC, 50/60 Hz.)
Power Consumption	19 Watts
Dimensions (W x H x D)	792 mm x 317 mm x 150 mm
Weight	12.5 kg with Battery

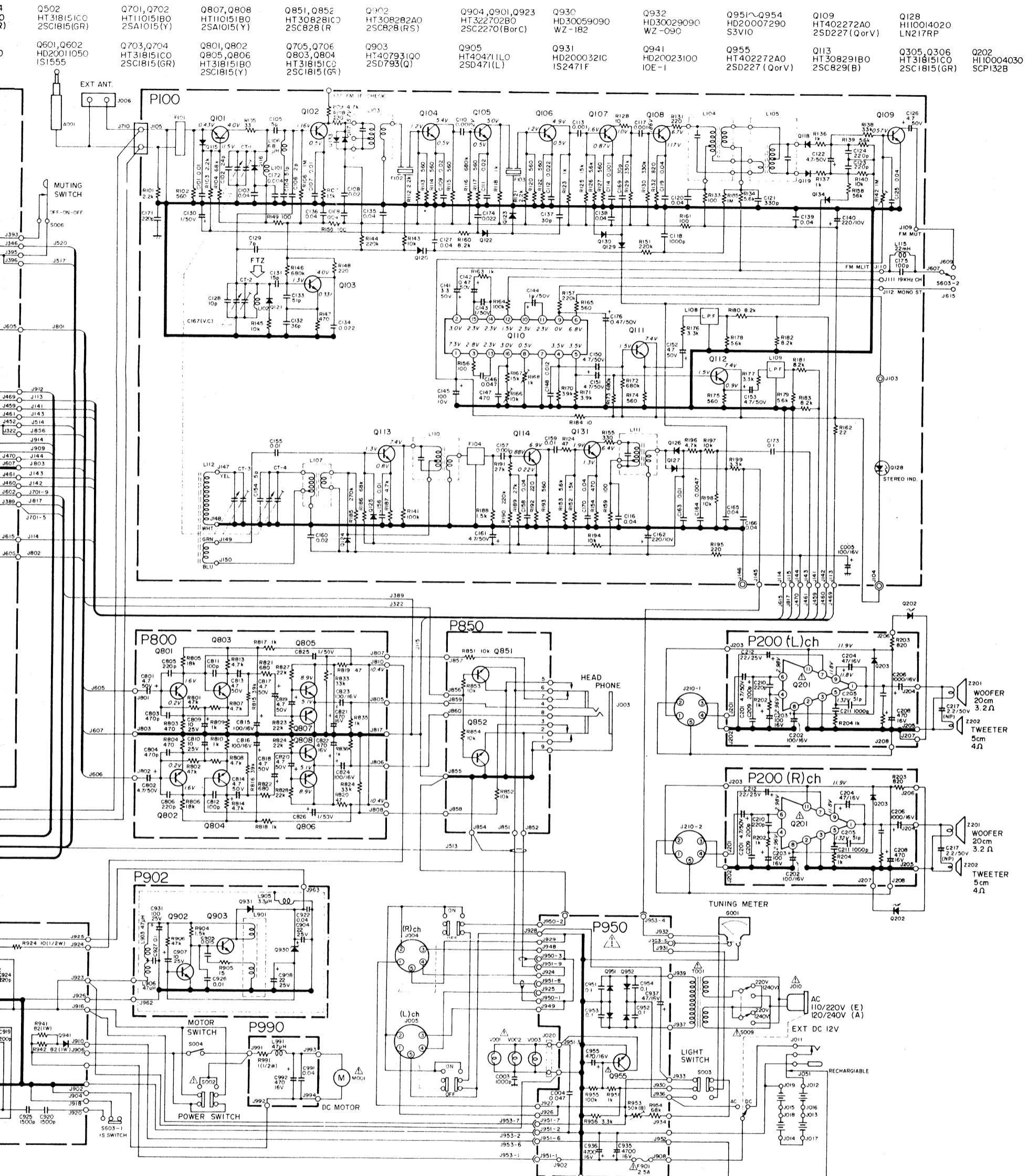
### 13. SCHEMATIC DIAGRAM



**Note on safety:** The parts marked with  $\triangle$  are important parts on the safety. Please use the parts having the designated parts number without fail.



**Components and wiring are subject to change for modification without notice.**



Components and wiring are subject to change for modification without notice.